

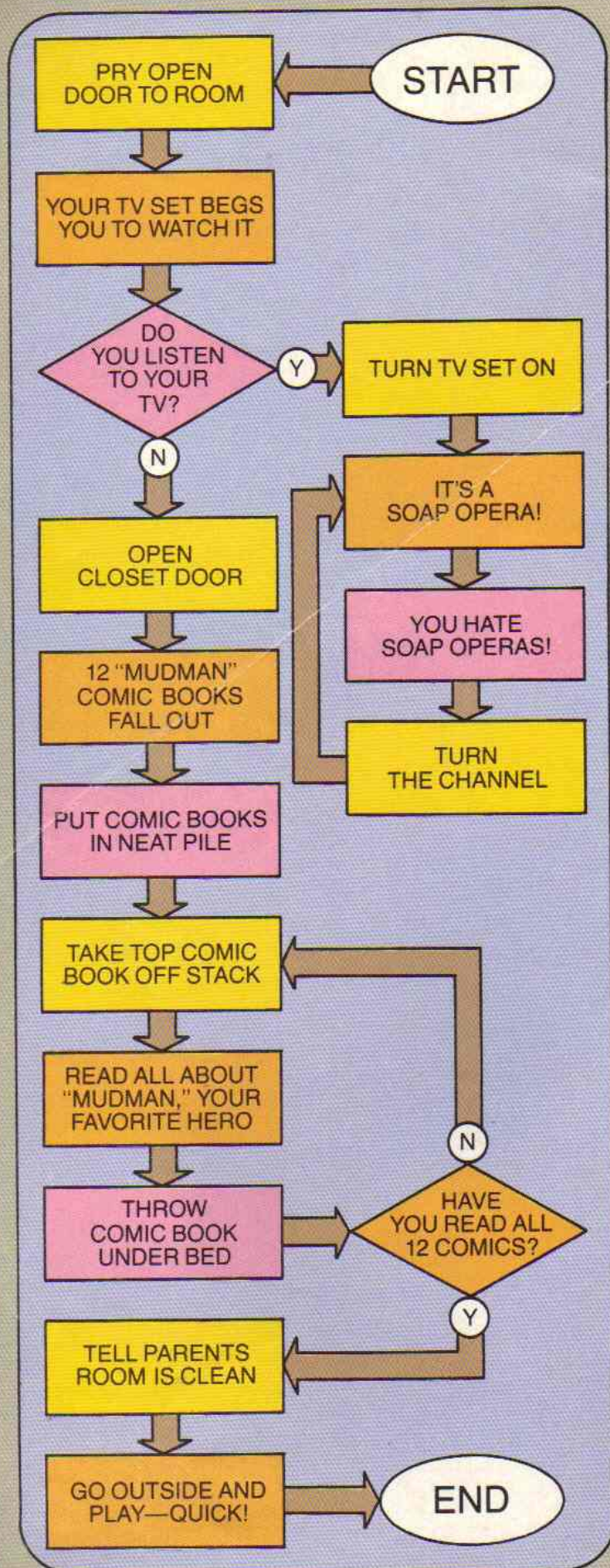
A Science Magazine from CTW, the Creators of Sesame Street

March 1985

321 CONTACT

Animal
Actors

A photograph of two dolphins leaping from the water, creating a large splash. The dolphins are captured mid-air, with their bodies arched and mouths open. The water is a vibrant blue-green, and the splash is white and frothy. The background is dark, making the dolphins and the splash stand out.



How to "Spring Clean" Your Room or So That's Where My Goldfish Went!

by Michael Dayton

When it comes time to clean your room, this page won't help you one bit. However, it does show you some of the basics of a computer flowchart.

Like many flowcharts, this one has several *loops*. In a loop, a computer repeats several steps. When all the steps are completed, the computer exits from that loop. Then it finishes the rest of the program.

What happens when the programmer forgets to tell the computer when to exit? The computer will repeat the loop forever—or at least until someone unplugs it!

In this flowchart, there is one loop that goes on forever. Can you find it? And oh yes...what if you *like* soap operas? (Answer on page 35.)

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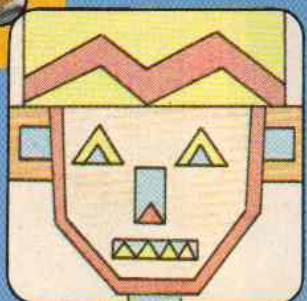
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Front Cover: Dolphins are big favorites in the world of trained animal performers. Audiences enjoy watching their stunts and trainers like to work with them.

Cover Photograph © Brian Parker/Tom Stack and Associates.

Coming Attractions

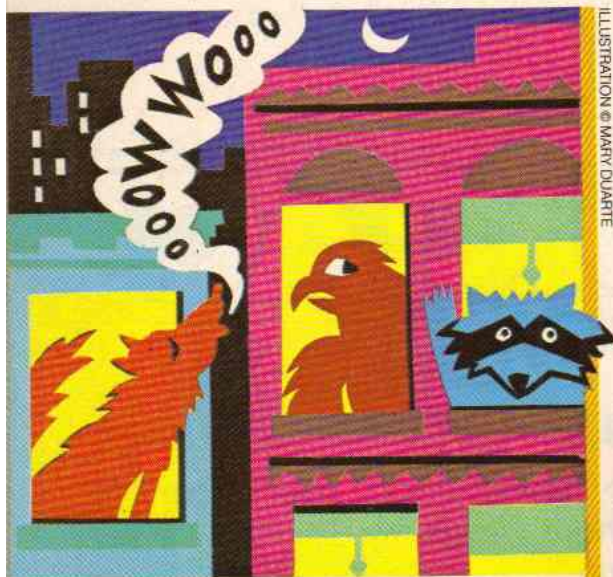


ILLUSTRATION © MARY DUARTE

Animals in Cities

Many big U.S. cities may be losing human population. But they are gaining another kind of resident—wild animals!

People who live in Los Angeles, California, have discovered coyotes prowling their streets. Lack of rain has reduced the coyotes' food supply in the wild. So the animals have taken to coming into the big city to eat from garbage cans.

Raccoons in Washington, DC, follow the sewers into the downtown area where some have been spotted near the White House. In Baltimore, Maryland, and other cities, peregrine falcons have started to nest. These members of the hawk family live on city pigeons.

"To peregrines, buildings are just like cliffs," says Tom Cade, a bird scientist. "A few of the young ones have gotten into trouble by falling down chimneys and crashing into windows, but all in all their adjustment has been successful." It's the newest thing in bird houses!

Floating Trains

All aboard the train of the future! Instead of going clickety clack, clickety clack, it goes whoooooosh. For this train doesn't ride on rails. It rides above them on a cushion of air. The secret is magnetism.

How does it work? If you've ever tried putting two magnets together north to north (or south to south), you know they push each other away. This same idea is what keeps the trains up!

In Japan, the trains have been tested at speeds of up to 312 miles per hour. The magnetic field, which is created by using electricity and magnets, keeps it floating less than an inch above the track.

The builders of the train say that it is fairly cheap to run. They say it uses less energy than other types of trains. And it is practically pollution free.

Right now there is a plan to build a magnetic train to run from Los Angeles, California, to Las Vegas, Nevada. The train would zoom along at 270 miles per hour. The trip would take just 70 minutes. Today that same trip takes nearly seven hours. If it's built at all, it won't come about until the late 1990s.

Story suggested by Pamela Murray, Knoxville, TN.

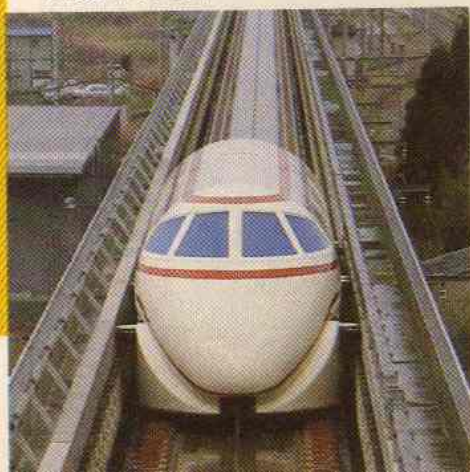
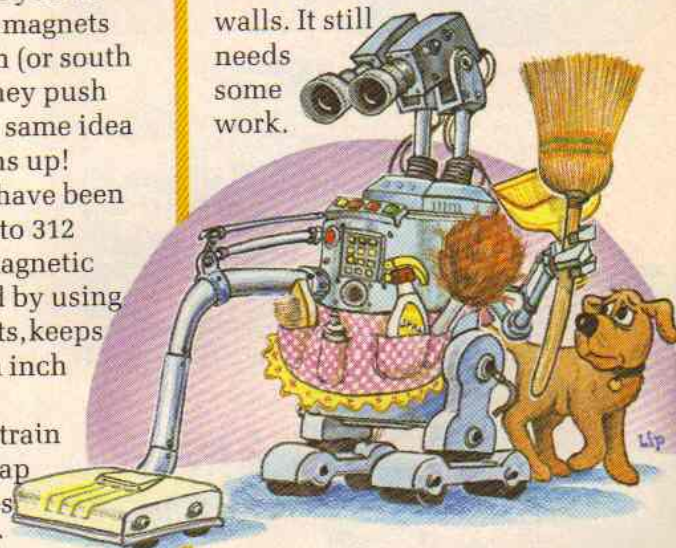


PHOTO © WIDE WORLD PHOTOS

But Does It Do Windows?

A robot is being tested that may vacuum your home someday. Built-in sensors sense where the furniture and walls are. It sounds good—almost too good to be true. The only problem so far: If the furniture is moved, the robot crashes into the walls. It still needs some work.



Star Thoughts

A soldier is in command of the galactic cruiser Venture. The soldier's mission: battle the alien Xenoids. If this sounds like a scene from a future time guess again. It's taking place right now—inside a video game. And the players are all real life soldiers from the U.S. Army.

The Army is using the game, called "Star," to see how soldiers work under pressure. The soldiers are tested against a perfect player—a computer!

Then another computer studies the results. It tells Army officials how the soldier did—and what he or she did right or wrong.

Is "Old Faithful" Unfaithful?

A geyser is a fountain of boiling water that shoots up from deep beneath the earth. In many places, people are harnessing the steam and hot water from geysers and turning them into energy.

The most famous geyser of all, however, isn't being used for energy. As a matter of fact, "Old Faithful" in Yellowstone National Park isn't working very well any more.

The geyser got its name because it used to send hot water and steam into the air every 65 minutes like clockwork. But that was before an earthquake changed the route of some underground streams that supplied the water to "Old Faithful".

Now it takes longer for the water to collect heat and build up steam for an eruption. So as many as 100 minutes go by between eruptions.

But scientists say there's no need to worry about America's most famous geyser dying out entirely. It should keep up its old tricks—only a bit slower—for at least 100 years more.

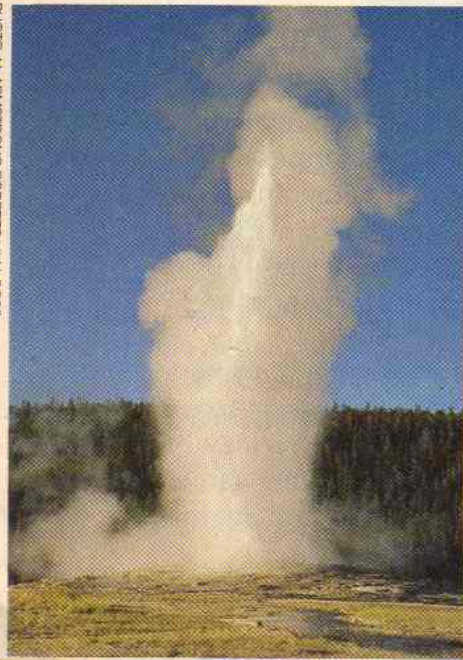
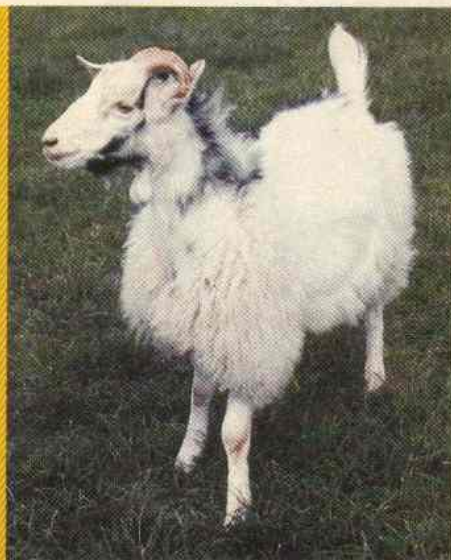


ILLUSTRATION © RON LIPKING

PHOTO: H. ARMSTRONG ROBERTS/© H. ROSS



Geep Whiz!

Scientists and researchers are experimenting with new breeds of animals. And you may be seeing some of them in the future.

One of these new animals is here today. It's actually a crossbreed of two different species: a goat and a sheep. Its name: a geep.

Shopping for Bytes

How would you like to get your hands on some \$10,000 worth of computers, printers, and software? If you're lucky enough to live in some parts of the Midwest, you can.

In Wisconsin, Iowa, and Illinois, stores called "Computer-marts" are springing up. Each store is full of equipment that a user can rent for four dollars an hour.

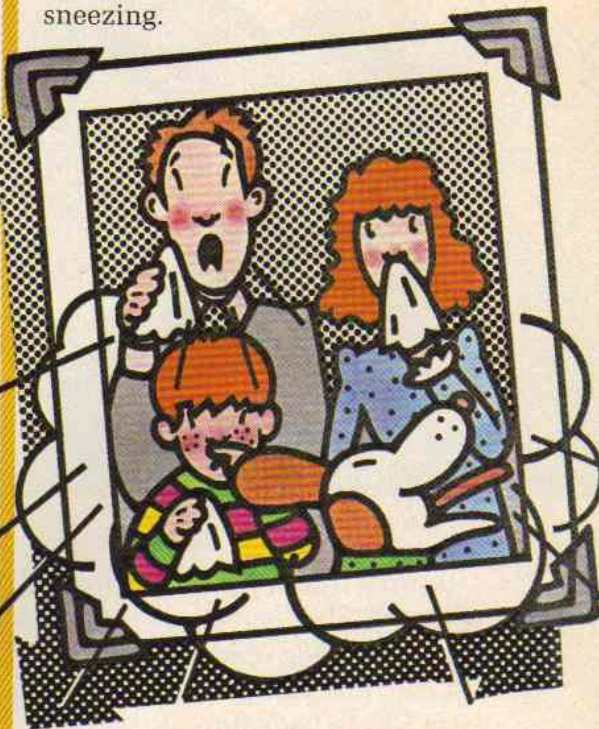
If you don't know how to use a computer, someone there will show you. You can do any type of work on the machine—homework, figure out budgets, create programs, or play games.

ILLUSTRATION © BARBARA HAMLIN

Ah Choo!

If you sneeze a lot, it's possible that your children will sneeze a lot, too. For sneezing can be handed down from generation to generation.

In a recent study, scientists found that 64 percent of the children in the study whose mothers or fathers sneeze a lot also sneeze a lot. The scientists say this may mean sneezing is in the genes. Some people are so sensitive that a bright light can set them sneezing.



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science stories that have to do with the future (which could even be next week!). Send stories to:

Coming Attractions
P.O. Box 599
Ridgefield, NJ 07657

TORNADO!

by Gary Ferguson



It was a Sunday morning in Prue, Oklahoma, when the Shepley family heard the warning on television. Ten-year-old Julie Shepley remembers her dad going out to take a look. A moment later, he ran back into the house. "Get in the closet!" he shouted, "It's coming!"

They huddled in the darkness together, waiting. Then there was a terrific BOOM, and Julie blacked out. "When I woke up," she says, "my dad was crawling out from beneath a pile of boards. There was nothing left of our house. It had all been blown away."

Julie's house had been hit by a tornado, the most powerful kind of wind storm on earth. Each year about 700 of these "twisters" blow across the American countryside, mostly in the Midwest. They are so common that America is known as the "tornado capital of the world."

Tornadoes are powerful swirling winds. They can hurl trucks through buildings or snap telephone poles in half like toothpicks. Weather scientists think that the tips of the worst twisters spin at about 300 miles per hour—faster than any other winds on earth, including hurricanes.

Still, nobody really knows for sure how powerful tornadoes are. It's almost impossible to place a wind-measuring instrument in a spot where a zigzagging twister will pass right over it. And even when tornadoes have passed over these instruments, their strong winds have ripped the machinery apart.

Although tornadoes are no laughing matter, they can sometimes do funny things. A man in Kansas was standing in his living room when a tornado struck. Before he knew what had happened, the twister had whisked him out the door

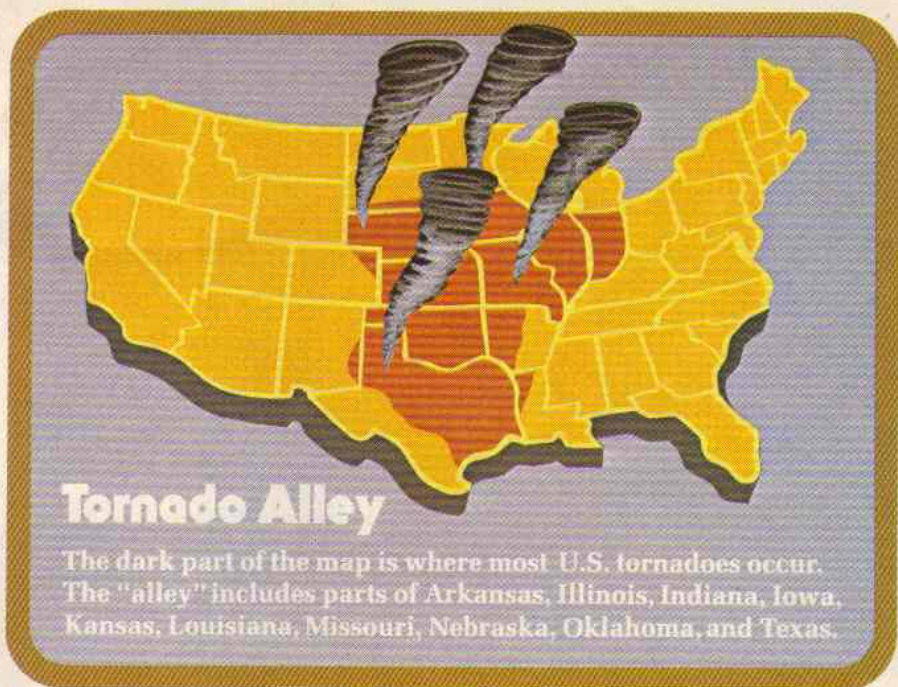


ILLUSTRATION © JO LYNN CRAIGS

and through the air. Then it set him down in a nearby tree! On the way the tornado also yanked off the man's shoes. But he was not hurt.

Twisters have also driven wooden sticks through steel, plucked feathers from chickens and stripped fur from dogs. One storm picked up a schoolhouse, turned it around backwards, and set it down again in the same spot with barely a scratch!

But tornadoes can be deadly. In just the first three months of 1984, 102 tornadoes struck the United States. Sixty-five people were killed. ➤

PHOTO © EDI ANN OTTO

Above: A tornado touches down on a farm in North Dakota. It has already started sucking up dirt near its tip. As it continues, the tornado funnel will become darker and darker.

Right: Sometimes a thunderstorm will produce more than one tornado funnel. This severe storm destroyed more than 8,000 homes in Wichita Falls, Texas.

PHOTO COURTESY OF ROBERT F. ABBEY JR. © FLOYD STYLES



That's why it's important for meteorologists (scientists who study weather) to learn more about how and why twisters form.

Closer Looks

In order to understand tornadoes better, a group of scientists at Oklahoma's National Severe Storms Laboratory has been studying them for 13 years. They are known as "storm chasers," since part of their job is to run after thunderstorms. That's because severe thunderstorms sometimes produce tornadoes. By getting very close to the action, these scientists hope to learn more about twisters.

"The original plan was to get information by driving a tank through a tornado!" says Dr. Robert Davies-Jones, a meteorologist who is in charge of the storm chasers. "But we found out that a tornado had once come through and tossed big armored military trucks around. So we dropped that idea."

Even though the storm chasers aren't driving tanks through tornadoes, they have other ways of getting close to the action. "We study what cloud patterns are like from pictures taken by satellites," says Dr. Davies-Jones. "We also look at weather maps." On some days the maps show

PHOTO: VISIONS / © J. ROSS BAUGHMAN

Above: Dr. Robert Davies-Jones (right) and another storm chaser place Toto in the path of a twister. The next step? Get out of the way—fast!

Right: Storm chasers plot a course to the heart of a tornado-producing storm. They use a two-way radio to stay in touch with their lab.

PHOTO: VISIONS / © J. ROSS BAUGHMAN

A tornado touches down with powerful winds. Its force can lift buildings right off the ground.

PHOTO: VISIONS / © H. BLUESTEIN

weather systems that could produce tornadoes. And then it's off to chase one down!

After spotting tornado-making weather conditions, the storm chasers take off from their lab in a pickup truck loaded with special equipment. If they're quick enough, they could soon find themselves right under a thunderstorm. After checking in with the lab by radio, the scientists drive toward the storm's southwestern edge. This is where tornadoes usually show up.

By then the day has grown dark and stormy. Sheets of rain dash against the windshield of the storm chasers' pickup truck. Lightning bolts flash around them. Before long a loud clatter begins to shake the truck as the rain turns into hail. This is usually a sign that the scientists are closing in on a tornado. Everyone leans forward in their seats and stares through the windshield.

"We look for a wide cloud that hangs down from the sky," says Dr. Davies-Jones. "This is a 'wall cloud'—the kind of cloud that usually produces large tornadoes."

Sometimes a tornado does appear. And it's almost always heading straight for the storm

chasers! They jump out of the truck, pull what looks like a barrel full of instruments out of the back, and leave it right in the path of the twister. This package is called TOTO, which stands for "Torable Tornado Observatory."

TOTO is named after Dorothy's dog in "The Wizard of Oz". That Toto got swept away to the land of Oz by a Kansas twister. The storm chasers hope *their* TOTO will gather information about wind speeds, temperatures, and air pressures inside a tornado.

After the instruments are in place, the storm chasers hurry back to the truck and take off for a safe spot. "We don't get scared unless the tornado comes within a mile or so of us," says Dr. Davies-Jones. "Then we have to bail out in a hurry! Usually, though, we're much more afraid of being hit by lightning than by the tornado itself." So far, TOTO has been a big help to scientists studying how tornadoes work.

A Lot Left to Learn

Much effort is now being put into learning how to predict twisters. If people could be ➡

warned earlier, they would have more time to seek shelter.

One of the biggest breakthroughs is Doppler radar. This is much like the radar that police officers use to catch speeding drivers. With Doppler radar, people can be warned that a tornado is coming 20 minutes before it arrives. In the past, they had to count on somebody seeing one with their eyes. That was usually only a minute or two before the storm hit.

Because of better early warning systems, fewer people are killed by tornadoes today. When radar shows that a twister might be forming, a special "tornado watch" message goes out to all local television and radio stations. If a tornado is then actually spotted, the watch becomes a "tornado warning." Then many towns turn on loud warning sirens.

If A Tornado Comes to Your Town

If a tornado should ever come your way, you should seek shelter right away. If you are riding in a car in open country, get out and lie down in a ditch or other low place. In a building, head for the lowest floor. Stay away from windows and outside walls.

With only one closet to hide in, Julie Shepley's family was lucky to walk away from a tornado unhurt. But if another Oklahoma twister comes along, they'll be ready. "We're building a new house," says Julie Shepley. "And this one will have a nice big cellar!"



PHOTO COURTESY OF ROBERT F. ABBEY JR. / © DREW LEVITON

Above: Not all tornado destruction is tragic. This chicken's feathers were plucked by a twister. But otherwise, the bird was unhurt!

Below: Most tornadoes last for less than 20 minutes. But they can do lots of damage. Afterwards comes the big job of cleaning up.



PHOTO: VISIONS / © J. ROSS BAUGHMAN

The Bloodhound Gang



ILLUSTRATION © BRAD HAMANN

The Case of the Sinister Smugglers

by Michael J. Dayton

"We're going to have a whale of a time on this fishing trip," Skip said to Vikki and Ricardo. The Bloodhound Gang was standing in the bus station of Maldemare. Despite Skip's statement, the Gang was here on business. Their latest case had brought them to this sleepy ocean village.

The week before, the Gang had received a note from Vikki's cousin, Carla Moore. Carla was a scientist who was studying windmills. In her letter, Carla had hinted that she was in trouble—serious trouble.

Carla was at the bus station to greet the Gang. Her thick work gloves and blue jeans were spot-

ted with grease and oil.

"Welcome to Maldemare," she said.

"So you have a case for us?" Skip asked.

Carla lowered her voice. "Let's go to my house for lunch. I'll tell you about it."

"Great idea," Skip said. "I'm so hungry I could eat a sea horse."

They got into Carla's car and headed to her house. Carla lived on a peninsula that jutted into the ocean. Her house was set into a hill. Behind the hill, the Gang could see two windmills whirling in the March breeze. One windmill had a long blade similar to an airplane propeller. ➤

The second one looked like a giant eggbeater, with several curved blades.

As they ate lunch in Carla's kitchen, they stared at the two strange machines.

"I thought all windmills had huge propellers on them," Ricardo said. "I've never seen one that could be used to make giant omelettes."

Carla laughed. "Most do have single propellers," explained Carla. "The eggbeater design is another type of windmill. I've found a way to improve the design. My eggbeater windmill works much better than the other one. It's fairly cheap to build and run too. It may allow people all over the U.S. to harvest the energy of the wind and turn it into electricity. That would save millions of barrels of oil—and dollars—each year."

"Windmills don't pollute the air either," Vikki added. "It's almost a perfect energy source—when the wind is blowing."

"Not exactly perfect," Carla said. "There is one problem," she added as she switched on the TV. The picture on the screen jumped back and forth. It made the Gang slightly dizzy.

"You see," Carla said, pointing at the screen. "Have you ever noticed how the TV picture sometimes jumps when an airplane flies over your house? The blades of the windmill affect TV waves the same way."

"It must drive you crazy when you're watching 'Silver Spoons'," Vikki joked.

"I wish that was my only problem," Carla sighed.

The Case Unfolds

"Do these windmills have something to do with the case you wrote about in your letter?" Skip asked.

"I'm not sure, but I'm certain that someone is trying to ruin my research—and run me off my land," she said angrily.

"Mitch Glazer is a local big shot," Carla said. "He owns the marina in town, and acts like he can push everybody around."

Carla explained that Mitch visited her one day. Mitch wanted to buy the peninsula that Carla lived on. Carla wouldn't sell—it was the best place in the area for her research.

Then real trouble began. Mitch hinted that Carla's windmills would suffer "problems."

Soon, wires snapped, motors suddenly burned out—always in the middle of the night. That was not all.

"Yesterday he said if I wasn't out of here soon—real soon—I would regret it. I just don't understand why he wants my land that badly. There are plenty of places nearby that he could buy."

"Did you notice anything unusual when your windmills broke down?" Ricardo asked.

Carla thought for a moment. Then she pointed toward the harbor. "Recently, I've noticed a small cabin cruiser, the *Cherrystone*, out there," she said. "It was picking up crab traps. I thought that was strange. Most of the crabbing boats work in the bay, not the ocean."

"I think it's time to visit the marina," Skip said.

"Be careful," warned Carla. "Mitch Glazer is as dangerous as a hammerhead shark."

Something's Fishy

The Gang went into town and headed for Glazer's Marina. They walked along the docks studying the different boats. They saw Mitch at work in the bait shop.

"Look, there's the *Cherrystone*," Vikki said, pointing at a wooden boat that was chugging into the marina. As they watched, the skipper of the boat docked and cut the motor. The skipper climbed on to the dock and went into the bait shop.

"Come on," Ricardo whispered. "Let's see what those two are up to."

The Gang slipped into the bait shop through a side door. They crouched quietly near a bait tank. Their hearts pounded. At any moment Mitch might discover them. Mitch was talking with the *Cherrystone's* skipper.

"The pickup is between black can five and red nun six," Mitch said.

"Again?" the skipper said. "That's too risky. The lady might see me again."

"That's the only safe place in the whole area. Don't you worry about her," Mitch assured him. "We're taking care of her and her windmills tonight." Mitch drew an imaginary knife across his throat.

"Okay, when do I pick up?"

The Bloodhound Gang never heard the an-

swer. When Ricardo saw the motion across the throat, he stepped back. The bucket he kicked made more noise than a fog horn.

Alarmed, Mitch charged at them. He grabbed Ricardo by the neck.

"What are you kids doing here?"

"B-bait," Ricardo stammered.

Vikki scooped up the bucket Ricardo had kicked. "That's right, we need a pound of squid for fishing."

Mitch scowled, then scooped some squid into the bucket. He thrust them at Ricardo.

"Now make like a fish and skate out of here!" he ordered.

"That was great timing, Ricardo," Vikki said when they got outside. "We don't know what time the skipper is making the pick up."

"I don't know what those two are up to, but Carla's project—and life—may be in danger," Skip said.

Ricardo was puzzled. "What was all that talk about cans and nuns?"

"Any sailor—or deep sea fisherman—knows the answer to that," Skip said. "While reading about fishing, I came across those terms. Cans and nuns are the names for buoys—those barrel-like objects that mark the channel from the ocean into the bay."

"Good going, Skip," Vikki answered. "All we have to do is get a map of the harbors here. Then we'll know where those two buoys are. Let's get back to Carla's—quick!"

The Gang Gets Caught

When they got back to Carla's, she was watching the evening news. The TV picture flickered as it had that afternoon. The Gang told Carla everything they had learned.

"I don't need a map to tell you where those buoys are," she said. "They're right at the end of this peninsula! If they're making a pickup, that can only mean one thing—drugs. I'd better call a friend of mine at the sheriff's office. She'll be interested to learn about this."

"That would explain the Cherrystone picking up crab traps where there are no crabs. They must be filled with drugs," Ricardo said.

"But we still don't know what time they'll be there," Skip said.

"Oh, oh, I think I do," Ricardo answered.

"Look at the TV."

"What about it?" Skip asked. "It's just Dan Rather—nothing scary about him."

"Not the show, Skip," Vikki added. "The TV is not flickering anymore. That means the windmill is not running now. And..."

"That means that we're here," Mitch Glazer said standing in the doorway. He pointed a loaded pistol at them. "And that means you're as dead as ducks."

"So you folks are pretty clever," Mitch said. "You figured out our plan. Carla's peninsula was the perfect place to unload smuggled drugs. So quiet. So isolated. But stubborn Carla didn't want to sell."

"Now it's time to go for a boat ride—way out in the ocean. Too bad your boat has so many holes in it. It will sink of course, and you'll die real fast."

"Not quite!" said a voice behind Mitch. "Drop your gun. It's the police."

Stunned, Mitch dropped his pistol. Police officers slapped handcuffs on his wrists.

"I should have put you in Davy Jones' locker when I had the chance," Mitch said.

"By the way, there's a hefty reward for the capture of these smugglers," the sheriff told the gang.

"We want it donated to Carla's windmill project," Ricardo said.

"That's right," agreed Skip. "After all, we're her biggest fans."

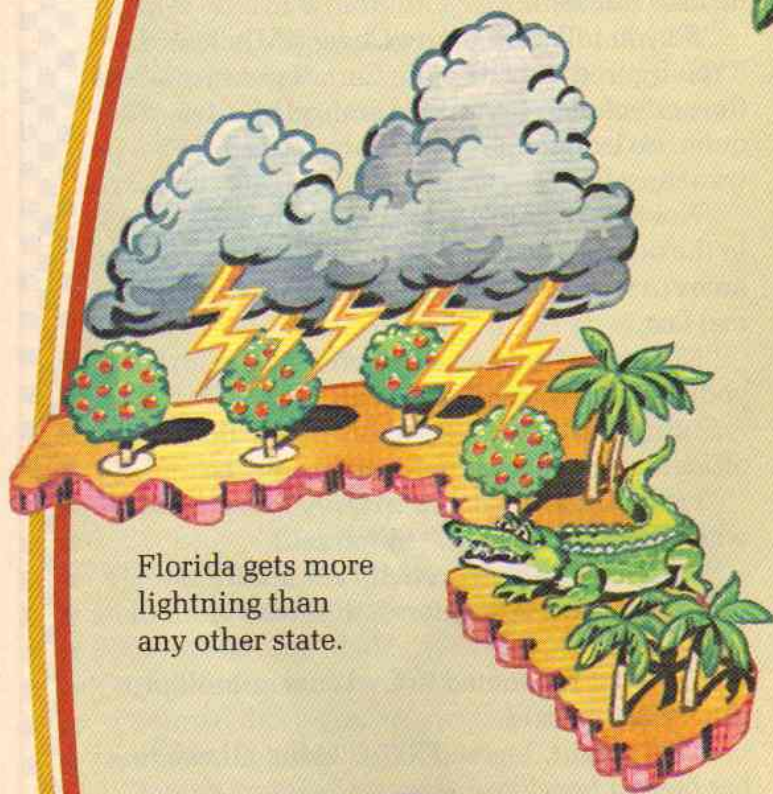
Vikki and Ricardo looked at each other and smiled. Then in one quick motion, they both pushed Skip into the ocean.

"It's time you finally went fishing," Vikki said.

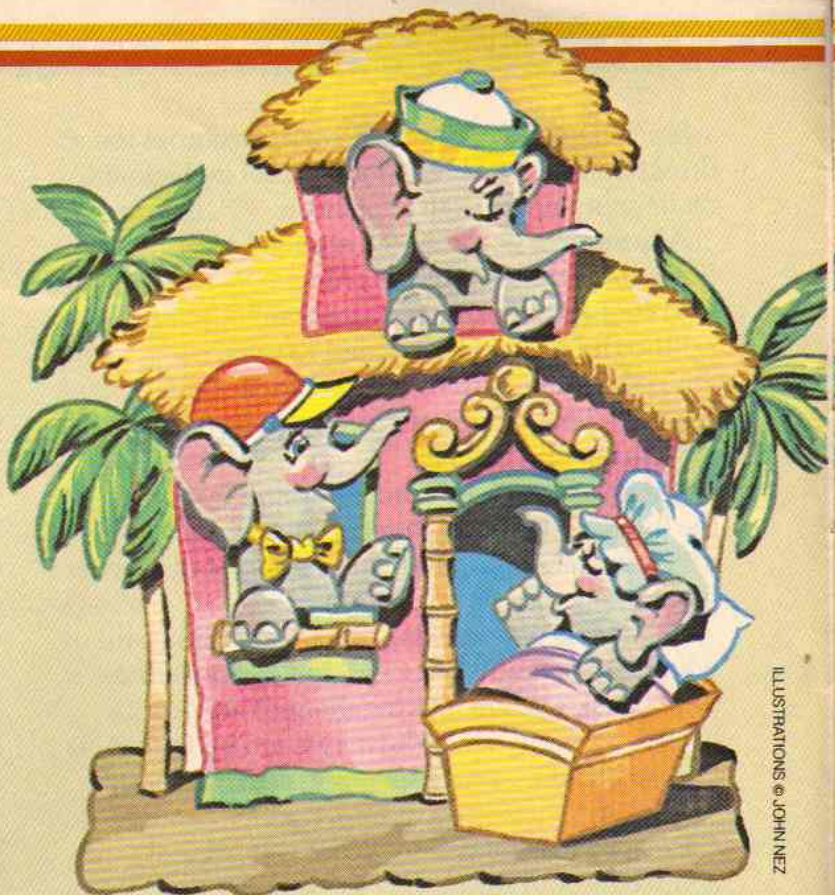
COMING NEXT MONTH

**The Case of the
Stolen Statue**

Factoids

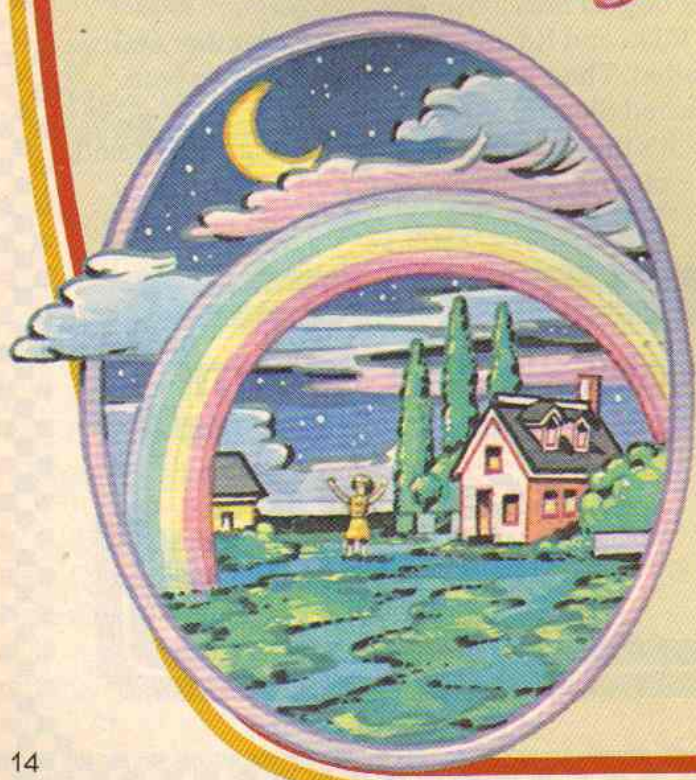


Florida gets more lightning than any other state.



ILLUSTRATIONS © JOHN NEZ

The nation of Sri Lanka has an orphanage for elephants without parents.



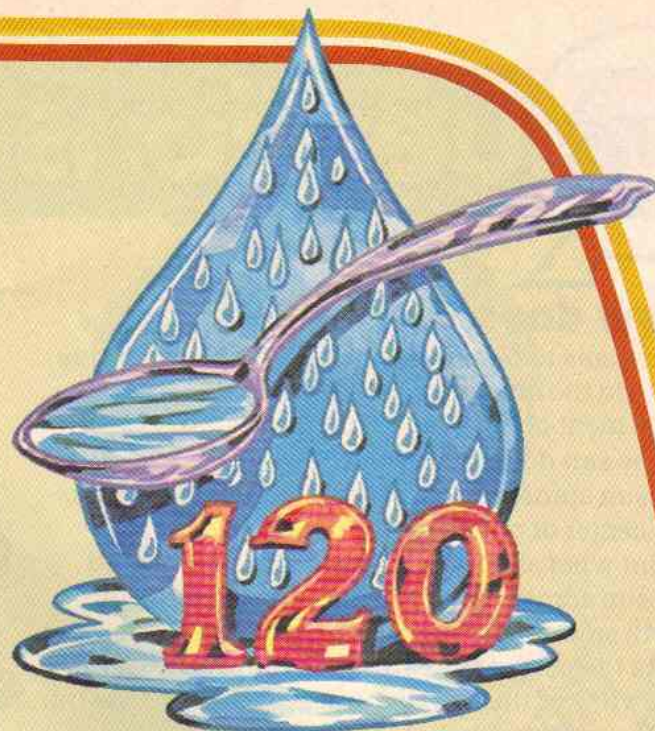
If moonlight shines on rain at night, it can produce a faint rainbow called a "moonbow."

The Sahara Desert is the sunniest place on earth with an average of 4,300 hours of sunshine a year.

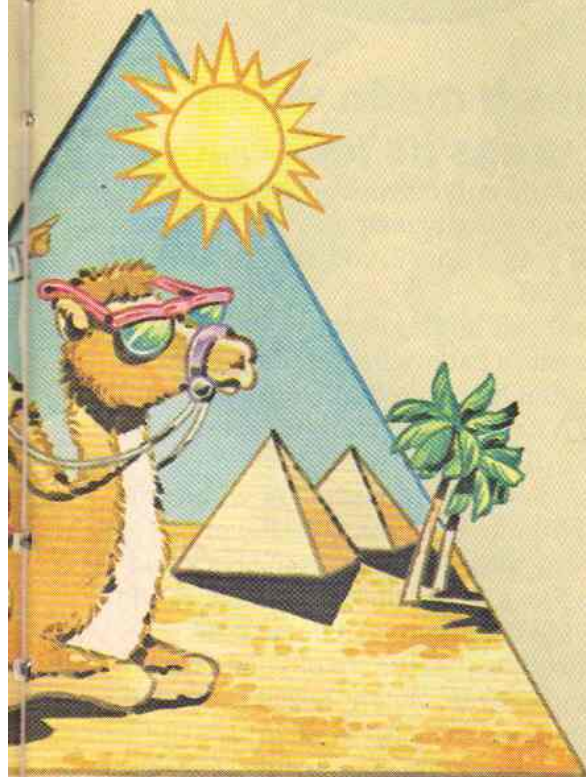




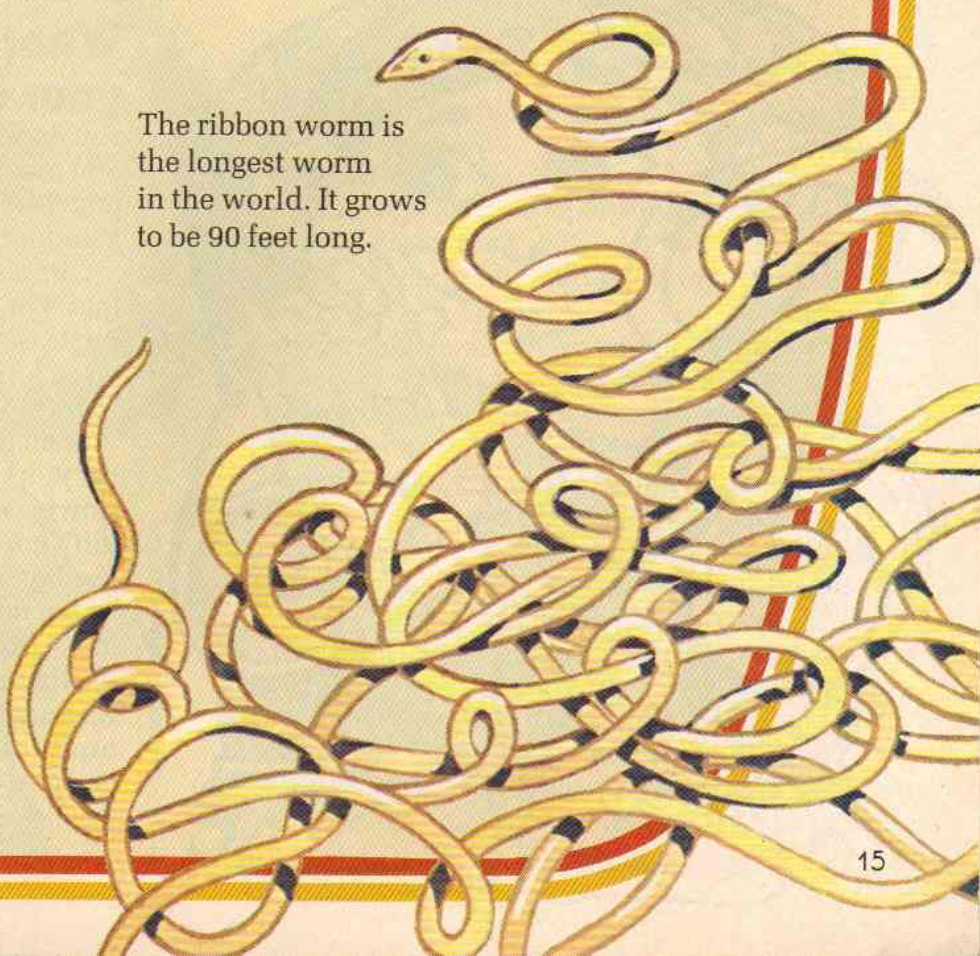
The tallest flower in the world is the sunflower. It can grow as high as 50 feet.



It takes 120 drops of water to fill a teaspoon.



The ribbon worm is the longest worm in the world. It grows to be 90 feet long.



Any Questions?

by Rebecca Herman

How does the sun move? The sun seems to travel across the sky. But that's due more to the movement of the earth than the movement of the sun.

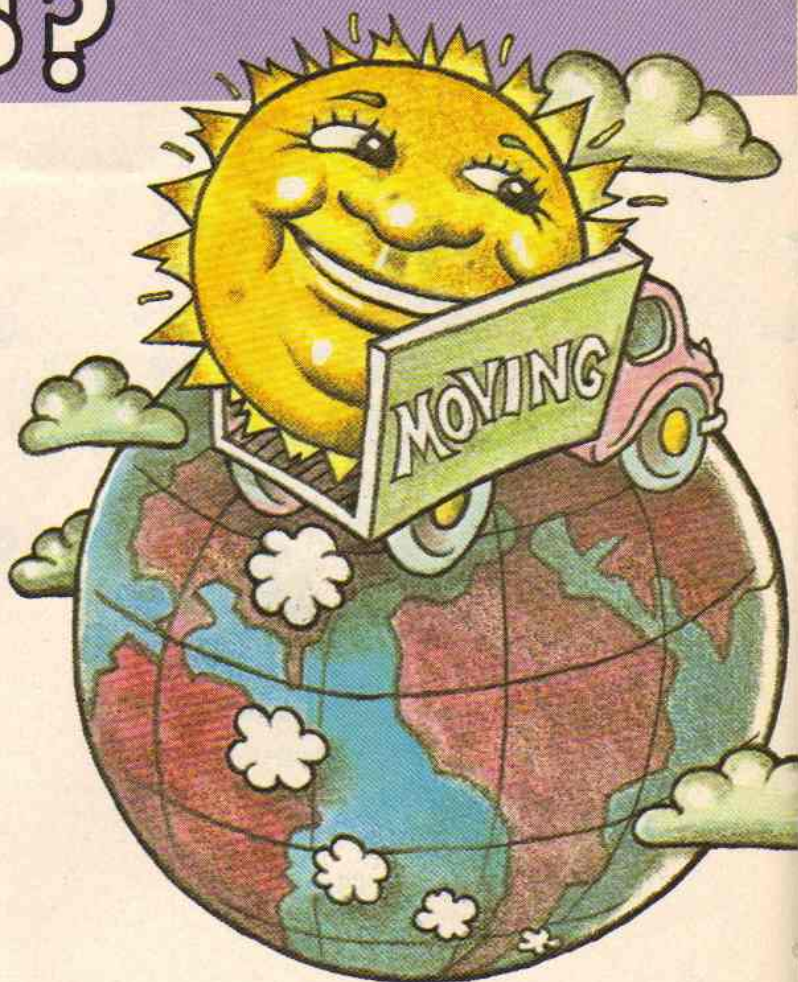
The sun *does* make some moves. For example, the sun spins, just like earth. The sun also orbits the center of our galaxy.

But what about the moves that seem to send the sun across the sky? Those belong to earth. Earth spins, making one turn every 24 hours.

As the part of the earth that you are on spins into view of the sun, the sun seems to rise. As the earth continues to turn, the sun looks like it is moving across the sky. But we are really just moving past the sun. It is like riding past a building in a car. The building seems to move closer, then farther away. But your car is really moving.

At the end of the day, your spot on earth spins out of view of the sun and the sun sets. That is, until earth spins around the next day and the cycle starts once more.

Question sent in by Jennifer LaBerge, Casper, WY.



What does it mean when your cat wags its tail? What do you do when you want to show how you feel? You may use body language. If you're happy, you might smile. If you're angry, you might stamp your foot or frown.

Cats also use their bodies to show their feelings. For instance, a cat might arch its back or ruffle its fur when it is scared. A cat's tail can tell you a lot, too. A cat moves its tail in different ways to show different feelings.

Sometimes when a cat is content or when you pet it, its tail will move back and forth very slowly. But if the whole tail is moving back and forth quickly, like a whip, the cat is angry. And if you bother it, the cat might lash out at you.

You might also see just the tip of your cat's tail move from time to time. When the cat is excited, the tip might quiver. If the cat is sleepy, its tail tip might move lazily from side to side. That's okay. It's probably just a sign that the cat is content and everything is purr-fect!

Question sent in by Ann Marie Scanlon, Boston, MA.



ILLUSTRATIONS © TOM BALLENGER

Do you have a question that no one seems able to answer? Why not ask us? Send your question, along with your name, address, and age, to:

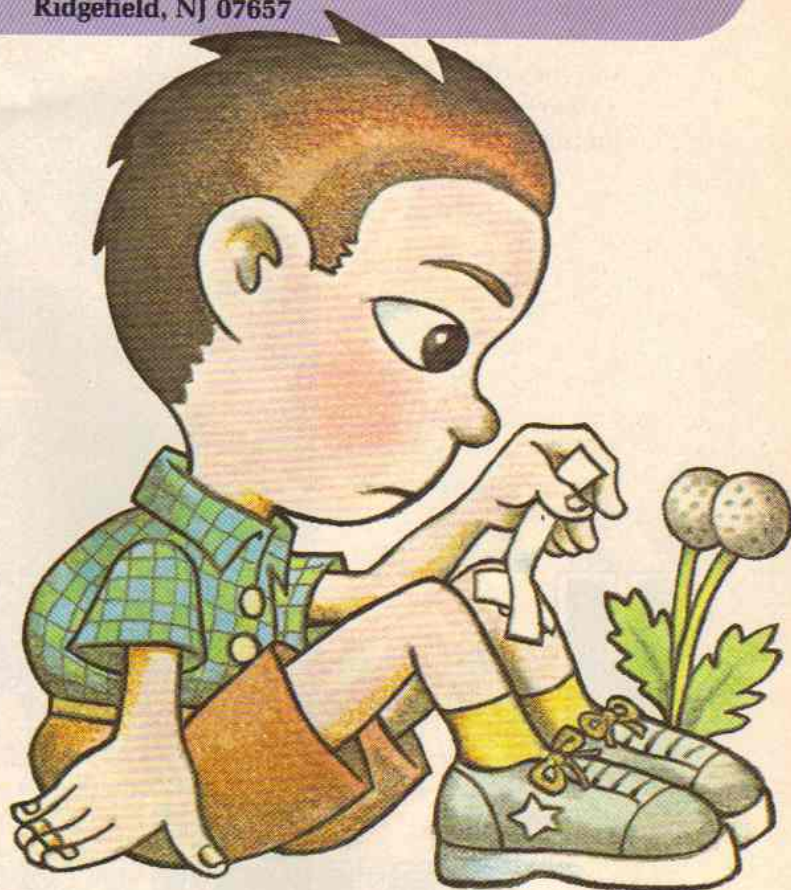
Any Questions?
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

What is a scab? You probably know that a scab is the yucky brown clump you get on your skin after you've cut yourself. That scab has a job to do. It helps your skin heal.

When you get cut, you start bleeding. Lucky for you, your body has a way to solve the problem. When your skin is injured, chemical messages are sent to your blood. Your blood starts making long, sticky threads called *fibrin* (FY-brin). The fibrin threads crisscross each other. They form a plug for the cut, called a clot. The clot stops the bleeding. When the blood clot dries on your skin, it's called a scab.

If you're like most people, you've probably picked at scabs. And other people probably told you not to. They have the right idea. The scab is there to protect your cut while it is healing. When the cut has healed, the scab's job is done. It falls off. Underneath is smooth, new skin.

Question sent in by Kathy Seamands, Budd Lake, NJ.



How is perfume made? Hundreds of different ingredients can be used to make one perfume. But some of the most important can be broken down into two groups. There are the oils that give a perfume its special smell. And there are the fixatives (FIX-uh-tivz) that make the perfume smell for hours after you put it on.

The most expensive perfumes start with fragrant oils gotten from flowers. Other natural perfume oils can be gotten from leaves, roots, tree bark, fruits, seeds, and the fat of animals. Once the fragrant oil has been taken out, it is mixed with other items like alcohol and water.

Each expensive perfume has its own special recipe for its own special smell. Some cheaper perfumes are made with artificial ingredients. These are chemicals made from petroleum or coal.

The cheapest kind of perfume is a kind you use all the time, though you probably don't know it. It's the kind used in soap!

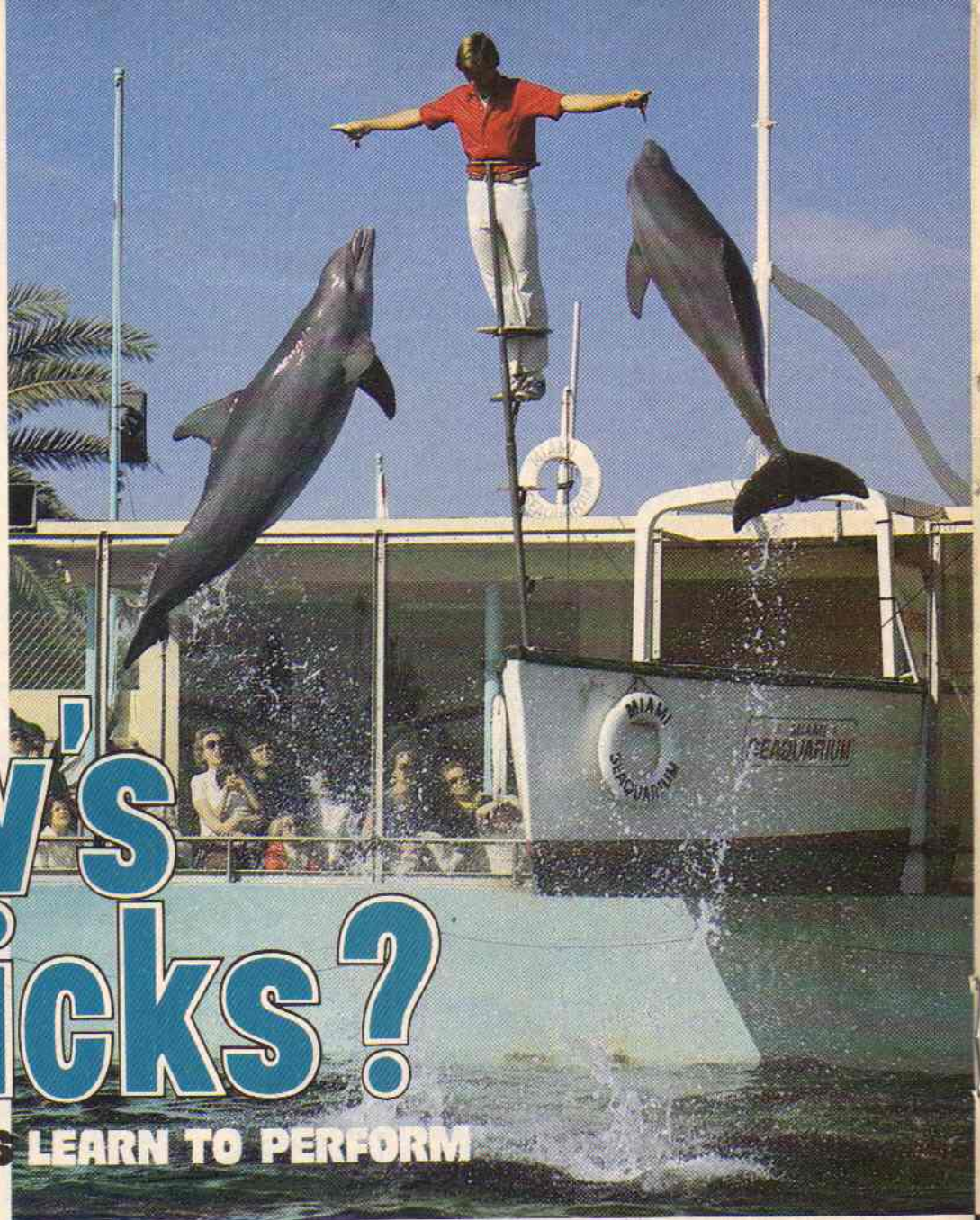
Question sent in by Melody Creed, Jacksonville, FL.

Animal trainers like to teach dolphins to perform. The animals learn quickly. And they often work harder when the audience applauds!

How's Tricks?

ANIMAL ACTORS LEARN TO PERFORM

by Joan Graf



Have you ever seen a parrot rollerskate? How about a dolphin leap through a hoop? Then you were watching a trained animal performer. Many animals do amazing tricks in aquarium shows, at circuses, on TV, and in the movies. Some animal performers, like Morris, the finicky cat in a TV ad, become so good they get to be superstars!

But cats aren't natural actors. And birds aren't born knowing how to ride bikes. They have to be carefully trained by human teachers to perform these stunts.

The first step in turning an animal into a performer is to "gain the animal's trust," says trainer Anne Gorden. It can take a long time be-

fore a wild animal loses its fear of people. That's why many trainers like to start an animal's training while it is still very young.

Anne works at Parrot Jungle, a "bird park" in Florida. There, hundreds of colorful, squawking parrots put on shows for visitors.

"All of our parrots are hatched out here, and we handle them and play with them as chicks," Anne told CONTACT.

The baby parrots become very tame and enjoy playing with their human trainers. Soon the birds begin to learn simple tricks. For instance, when a trainer gives a signal, two young parrots, who have learned their lessons well, roll over on command.

Morris's TV commercials make him a star in the world of animal performers.

Tricks and Treats

Just as cooks follow certain steps to make their recipes work, animal trainers follow steps, too. They use the rules of a simple kind of learning called *conditioning*. To condition an animal to perform, a trainer gives his "students" rewards when they do something correctly.

Dolphins love to eat fish, for example. So trainer Linda Erb keeps a bucketful handy when she's teaching a dolphin a new trick. Linda is a trainer at Flipper's Key West, an outdoor aquarium where many dolphins go to school.

"To a dolphin, a fish is pay for doing something correctly," she explains.

Would you do some work if the reward were a fish? Probably not! Trainers know they have to find the tastiest food for the animal they're training. The tastier the reward, the more likely the animal will work to get it.

Performing parrots work for peanuts. White rats love M&Ms. When Morris the cat makes a TV ad, he really does act finicky.

"He'll only perform if he can see the food!" Bob Martwick, Morris's trainer, told CONTACT.

Some animals don't always need food for a reward. They'll work for a pat, a tickle, or for praise. The trainers at Flipper's often hug their students and stroke their skin. In return, the trainer sometimes gets a fishy kiss.



PHOTO COURTESY OF DANIEL J. EDELMAN INC.

That's Entertainment!

Animals often make mistakes when they first learn new tricks. And sometimes they have the habit of interrupting another animal's performance. How do trainers discourage actions they don't want? ➡

When trainer Trish Foreman gives the signal—two fingers held up in a "V"—this cockatoo spreads its wings and shows off its pretty feathers.



PHOTO © JOAN STEPHENSON GRAF

A trainer rewards only an animal's good behavior. She does the opposite with her student's mistakes. If a trainer punishes or ignores wrong actions, the animal learns to stop doing them.

"When a dolphin misbehaves, the trainer tells it 'no,' and steps away," explains Linda. The dolphin doesn't get a reward for its bad behavior. The lesson? Being bad doesn't pay!

Animal experts follow another important rule. The trainer must reward or reinforce good or correct behavior immediately.

Suppose a trainer wants to teach a dolphin to splash its tail on command. But the animal may do three tricks in a row, like splash its tail, turn around, and dive. Unless the trainer is fast enough to reward the dolphin immediately after the splash, the animal might think the reward is for turning or diving. The dolphin must be able to make a connection between the reward and the right action.

Sometimes it's hard to reward the animal right away, though. After all, you can't feed or hug a dolphin when it's at the other end of a pool! So you need something to serve as a temporary reward. This tells the animal that it has done something correctly—and that the real reward is on its way.

When a trainer begins to work with a new dolphin, for instance, he blows a whistle just before the animal is fed. The dolphin learns that the whistle means that food is on the way. Later, when the animal is learning a new trick, the whistle signals that the real reward—the fish or a hug—will be given soon.

Hamming It Up

Some tricks are fairly easy to teach. Some animal trainers teach their "students" to do some ordinary action when a special signal is given. For example, an untrained parrot will sometimes bob its head up and down. It looks like the bird is nodding "yes, yes"!

But suppose the trainer points his finger in the air whenever the parrot nods its head, and then gives the bird a peanut. Soon the bird will nod "yes" on cue when the trainer points his finger in the air.

Performing animals sometimes amaze their audiences with complicated tricks. Parrots can play basketball, or ride a tiny bike. A dolphin can soar through a hoop or leap into the air and

touch a target with its snout. How do trainers manage to teach them?

First a trainer breaks a difficult trick into many small steps. To start off, she blows her whistle and rewards the animal with a fish when it touches the tip of a pole that is held underwater. Next, she rewards the animal only when it follows the pole tip closer to the hoop. Finally, the dolphin is coaxed into swimming through the hoop itself.

Then the trainer gradually raises the hoop out of the water. The dolphin sails through the hoop each time as it is lifted higher and higher.

It may sound easy, but animal trainers know that teaching a nifty trick takes lots of time and patience. "It takes four sessions a day, for at least a year, to teach a parrot to rollerskate," says Anne Gorden.

Sometimes animals learn new tricks by copying other animals. For instance, baby dolphins stay close to their mothers for many months after

Below: Although the cockatoo makes riding a bike look easy, trainers have to spend many months teaching birds to do tricks like this.

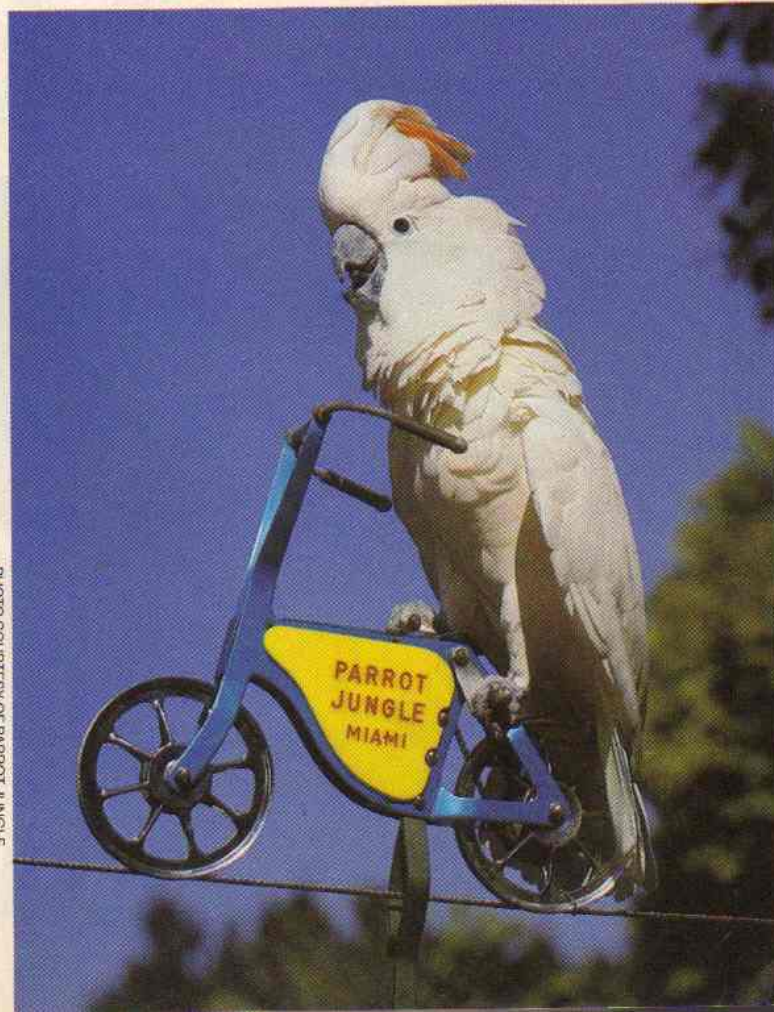


PHOTO COURTESY OF PARROT JUNGLE



PHOTO: ANIMALS/ANIMALS/© ZIG LESZCZYNSKI

Some of the most exciting animal performers can be seen in circuses. This tiger leaps through a hoop at the command of its trainer.

they are born. "As Mom performs, the baby will start to learn tricks by trying to imitate its mother," explains Linda Erb.

"It took us a long time to train a single bird to slide down a miniature playground slide," recalls trainer Trish Foreman. It must have looked like fun to the other parrots. "Several picked it up from the first bird very quickly," she says.

The next time you watch an animal performer, look closely. You'll probably see the trainer reward a well-done trick with a peanut, a fish or a hug. But be sure to clap loudly anyway. Many animal actors love a good audience. The applause becomes their reward, too.

For example, during a class trip to a dolphin show, some kids were waiting for the show to begin. Suddenly, the dolphins started leaping out of the water even though the trainer had not arrived. As the kids cheered wildly, the show-off animals hammed it up. For them, the applause seemed to be reward enough.

Doing a stunt just right brings this dolphin a kiss from its trainer. Other kinds of animals prefer food as a reward for doing tricks.

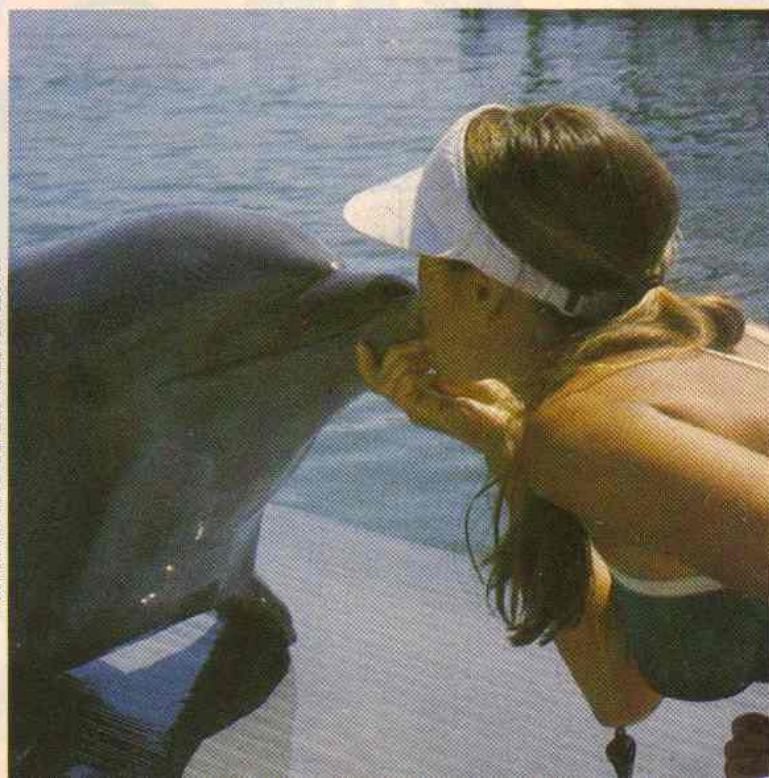


PHOTO COURTESY OF THE FLIPPER SEA SCHOOL

List of the Month

by Joanna Foley

Stormy Weather U.S.

Navy pilot William Rankin once fell right through a thunderstorm when he parachuted out of a damaged airplane. The storm wouldn't let him simply float to earth but slammed him up and down like a yo-yo. And the rain was so heavy that he feared he'd drown—in midair! After 40 minutes, Rankin finally landed safely in a tree. From then on, he always steered clear of thunderstorms!

Snow Job People in Buffalo, New York, expect bad winters. But the January 1977 snowstorm was one of the worst ever. A big storm from Canada trapped over 17,000 people in Buffalo's downtown offices. All travel came to a halt. Snowmobiles had to rescue people from stalled cars. Even Niagara Falls began to ice over. To clear the streets, trucks dumped snow in the parks. Some of these snow mountains didn't melt until May!

The Wind that Sank a Thousand Ships

A ruler named Kublai Khan invaded Japan in 1281 with many ships. The Japanese fought back for weeks. But the invaders seemed sure to win. Then a whirling typhoon roared in from the sea. It sank most of Khan's ships or drove them onto shore. The Japanese thought a "divine wind" had saved their nation.

Going in Circles A sailing ship bound for the island of Madagascar in 1845 ran into a terrible storm. For five days it was tossed about by violent winds. But at last the sky cleared. The captain checked his location and found the ship was only a few miles from where it had started! The whirling winds of the storm had driven the ship in a giant circle for nearly a week!

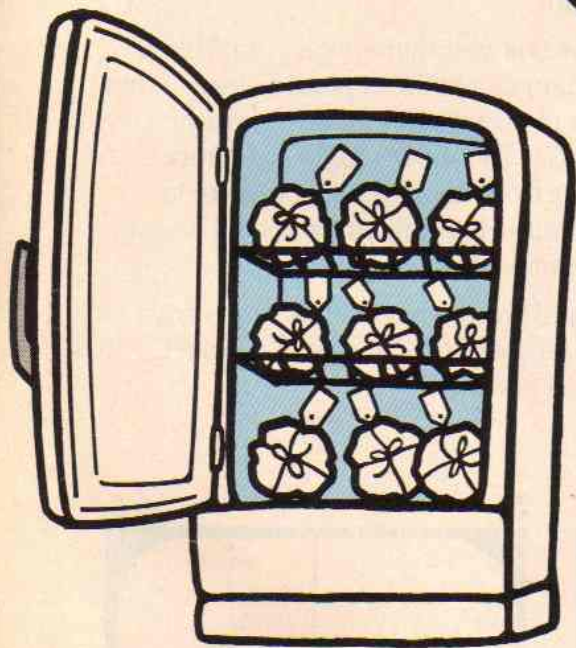
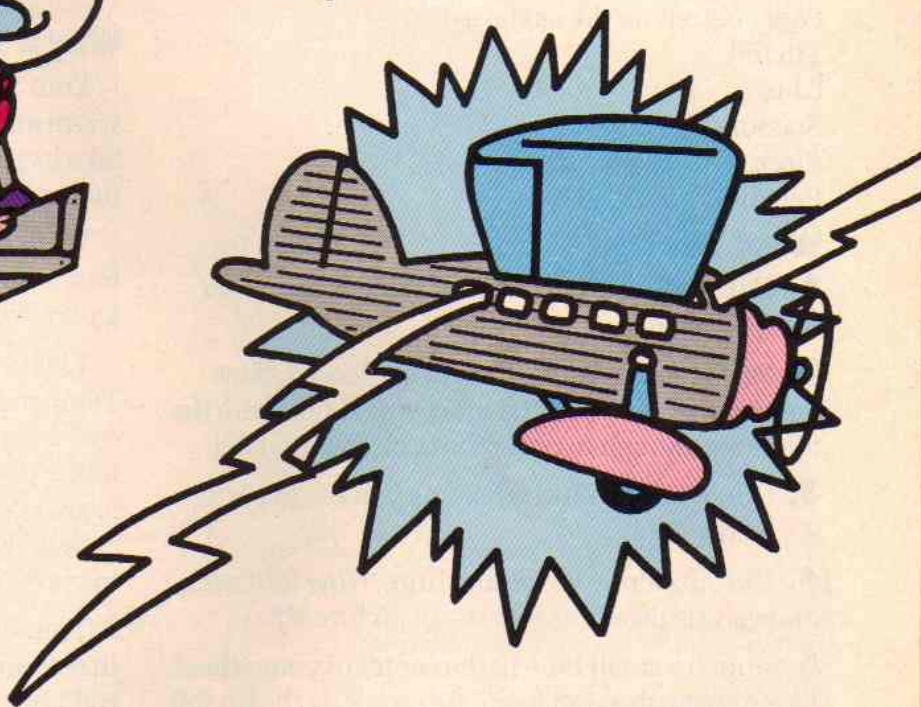
Weird Weather

Almost everyone has a weird weather tale to tell. Here are some stories that are strange but true.

Eye See You In 1928, Kansas farmer Will Keller spotted a tornado. So he dashed to his underground shelter. But before slamming the door, Keller glanced up. The tornado's funnel was hanging right overhead. A gassy smell and a hissing noise was coming from it. And Keller saw boiling clouds and zigzagging lightning. He became one of the few people ever to look into the eye of a tornado and live to tell about it.



Lightning Fast How's this for a hair raiser? In 1938, a British pilot was flying through a rain cloud over France. To see more clearly, he opened his cockpit window. Suddenly a ball of lightning entered the plane and singed the eyebrows off the pilot! Then the lightning rolled into the passenger area. There it exploded with a bang. No one got hurt—and the pilot's eyebrows later grew back!



Hail and Farewell In 1971 giant hailstones fell on Coffeyville, Kansas. Government researchers in Colorado asked the Kansas folks to send in the big hailstones they had saved in their freezers. About 75 people packed up their grapefruit-sized hailstones with dry ice. These whoppers were then flown to Colorado. A dozen were found to weigh over a pound—each!



Once in a Blue Moon

Back in 1884, there was a very cool summer. Snow fell in July in some parts of the U.S. And the sun and moon sometimes looked blue, green, or pink. The cause? An 1883 eruption of a volcano called Krakatoa. That blast in Indonesia threw dust and ash into the air and blocked out some of the sun's rays. The result was cooler weather all around the globe.

ILLUSTRATIONS © BARBARA HAMLIN

Experiment

Wind Wheel

Ever wonder what makes wind blow? Here's a simple experiment you can do to find out.

What You Need

Cardboard
Paper cutout on the next page.
Tin foil
Glue
Scissor
Piece of string (18" should do)
Pencil

What You Do

1. Cut out the page with your wind wheel from the magazine.
2. Paste the page on a piece of cardboard. Now paste some tin foil on the other side. Make sure the foil is big enough to cover the back of the wheel.
3. Cut out your wind wheel, as you see in picture #1 below.
4. Cut slits along the dotted lines. Now fold each orange side down, as you see in picture #2.
5. Punch a small hole in the center of your wheel. Pass a string through it and tie a knot on the tin foil side. Your wheel should now look like picture #3.

6. Hold your wheel by the string over a radiator or another safe heat source. If it gives off enough heat, your wheel will spin—the hotter the heat, the faster it spins.

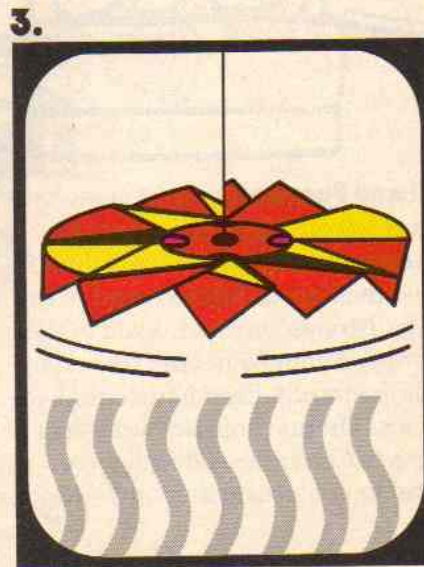
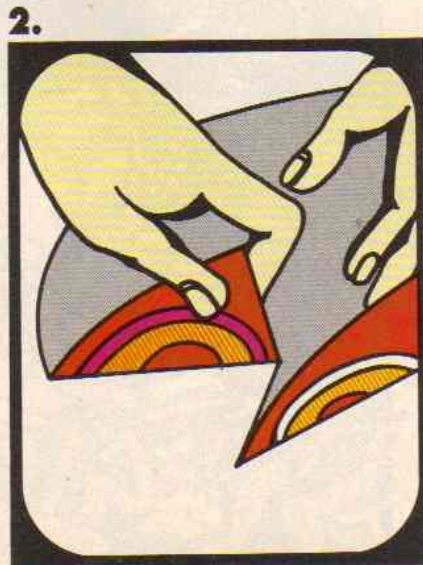
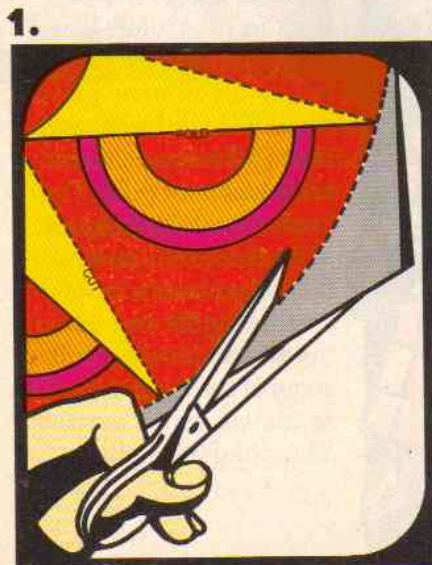
Why It Works

Your heat source is warming the air above it. This warm air rises. As it does, cooler air rushes in to take its place. That air is heated also. It rises up and more cool air takes its place.

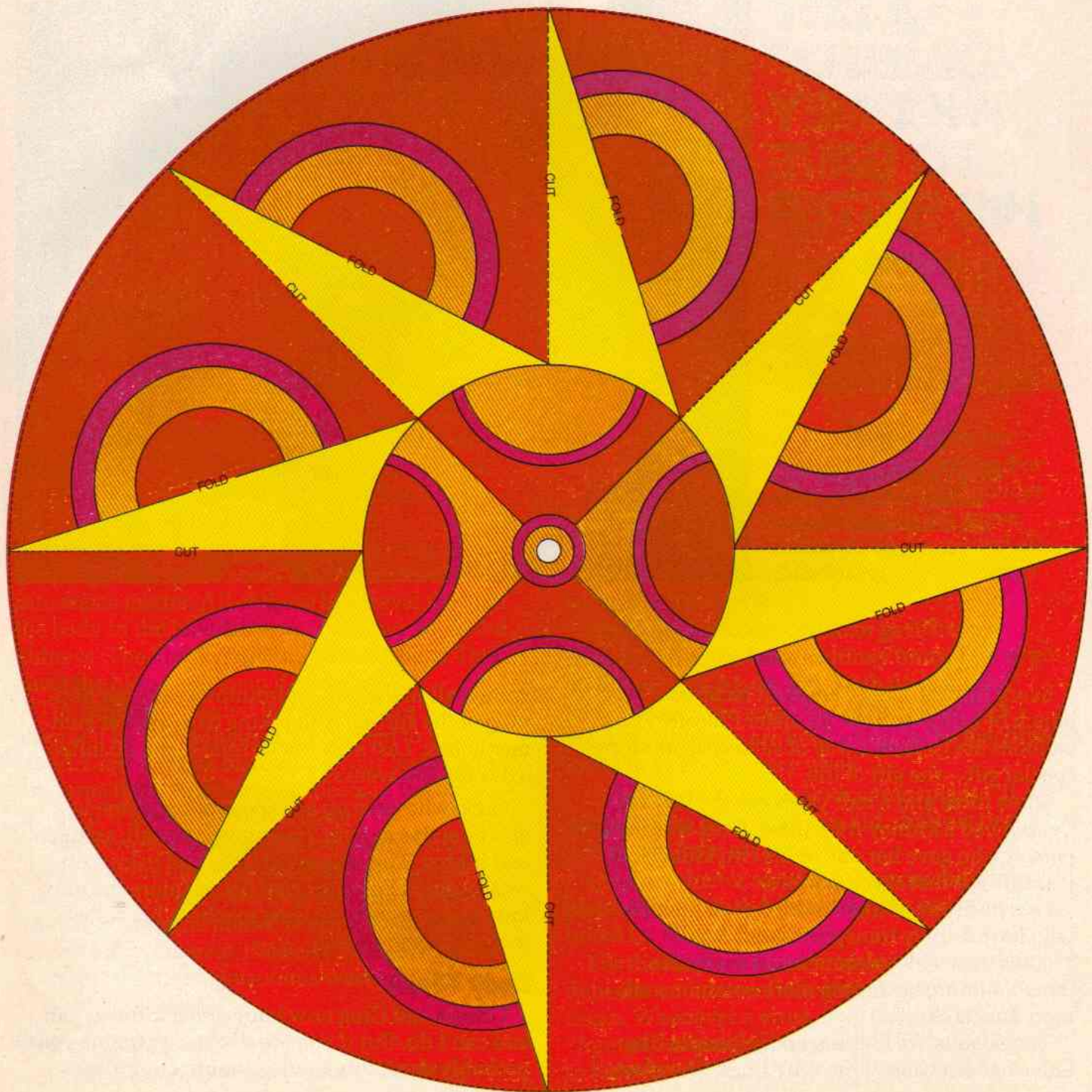
Your heater is creating a cycle of moving air. This moving air pushes at the bent edges of your wheel and makes it spin.

This principle is at work wherever winds blow. Temperature changes a lot from place to place. This causes a change in air pressure. Warm air means lower pressure. Cold air means higher pressure. Air is always moving from areas of high pressure to areas of low pressure, looking for balance. This air movement is what we call wind.

Your heater and wind wheel helped you prove that changes in temperature cause wind—even right in your own house!



ILLUSTRATIONS © SEYMOUR SCHLATTER



It's All in the Family

A BOY GIVES UP A KIDNEY TO SAVE HIS SISTER

by Michele Lyons

Greg Campbell gave up a kidney to help save the life of his sister, Celeste. Now they are both in great health.



PHOTOS COURTESY OF THE CAMPBELL FAMILY

Every July 29, Greg Campbell receives a bunch of balloons from his sister Celeste. The balloons are Celeste's way of saying thanks for a special gift—the gift of life.

Some three and a half years ago, on July 29, Celeste had a kidney transplant. Greg was the person who gave her one of his two kidneys. It was this gift that saved her life.

Celeste is one of hundreds of young people who have kidney transplants each year. Thanks to new developments in medicine, transplants are becoming more common and more successful.

Transplants are helping young people like Celeste to lead active, healthy lives. She plays

volleyball in the fall. Badminton keeps her hopping in the spring. And biking trips are her summer hobby. Last summer Celeste biked 50 miles a day for two weeks!

Greg, who gave up a kidney for his sister, is also as active as ever. He enjoys baseball, skiing, and hiking. The only sport Greg had to give up was football. Being tackled could injure the only kidney he has left. So Greg manages his college football team instead.

Body Filters

Celeste and Greg now know what kidneys can and can't do. But if you are like most people, you probably don't think twice about your kidneys.



Because Greg gave Celeste one of his kidneys, she feels closer to him than ever before.

You eat, drink, and have energy when you need it. But much of what you eat and drink becomes waste. How does your body know what to get rid of? Thank your kidneys!

Your body breaks down everything you eat into tiny bits of good stuff—called nutrients—or into waste matter. All of these bits travel through the body in the bloodstream, until they get to the kidneys. The kidneys are the body's filters. They clean the blood and keep it pure.

The nutrients needed by the body are absorbed by the kidneys and returned to the blood. Liquid waste matter that your body can't use turns into urine. Urine collects in the bladder until it passes out of the body.

Most people are born with two kidneys, but one can do the cleaning and filtering job just fine. Normally, only one quarter of one kidney is needed to filter the blood. When both kidneys break down, however, the body is in BIG trouble. Without treatment, poisonous wastes build up and can cause death.

Out of Order

Usually, serious kidney problems build up

over many years. Celeste was eight when her doctors first thought something was wrong. For five years they tried to bring her problem under control with drugs. But things only got worse. "By the time I got to eighth grade, I was tired all the time," Celeste told CONTACT. Her kidneys were shutting down.

That's when Celeste's doctor gave her a choice. She could have a kidney transplant or go on dialysis (di-AL-uh-sis). With dialysis, the body's wastes are taken out of the blood by a machine. Patients are hooked up to the machine for 12 to 15 hours every week.

Celeste decided to go with a transplant. "If you're trying to be an active kid, dialysis ties you down," she explained.

Celeste's doctor agreed. "A successful transplant offers kids the chance to live normally," noted Dr. Robert Weiss.

For the most part, the success of a transplant depends on how well the body accepts its new organ. Whenever a virus, a germ, or anything "foreign" enters the body, white blood cells try to fight the newcomer. That's how the body

fight off infections.

Unfortunately, the body “thinks” of any transplanted organ as something “foreign.” The secret is finding a person who has an organ that is very similar to the patient’s. That way the body may not put up as strong a fight. Since relatives often have similar genes, transplants work best when they are a family affair!

Celeste had a large family to choose from. Celeste’s parents, her three brothers, and two sisters had their blood and kidneys tested. “It was like a kidney contest,” Celeste remembered with a smile. Greg, her 17-year-old brother, was the winner.

As soon as Greg heard the news, he decided to part with one of his kidneys. “Someone in my family was dying, and I had a chance to help. I think only a selfish and unloving person would have said ‘no,’” Greg recalled.

Celeste’s doctors wanted to be absolutely sure Greg knew what he was getting into. They told Greg it was okay to back out at any time. But Greg stood by his decision.

A few weeks later, Celeste and Greg were in side-by-side operating rooms. When Celeste woke up, she couldn’t remember ever feeling better. Greg was doing fine, too.

No Fooling

Trouble was just around the corner, though. Less than a week after the operation, Celeste’s white blood cells began fighting her new kidney. Her doctors weren’t too surprised. “The body puts up its most ferocious fight during the first few months,” explained Dr. Weiss.

The only way to fight back is with medicines. Certain ones stop the white cells from working. That’s a big risk, though. Once the white cells shut down, nothing stands in the way of deadly infection. But after a few weeks, her body accepted the new kidney.

Celeste still takes medicine every day to keep her white cells in check. (In fact,

Greg and Celeste both enjoy sports and are leading very active lives now. She plays volleyball, badminton, and goes biking. He plays baseball, skis, and hikes.



PHOTO COURTESY OF THE CAMPBELL FAMILY

she will continue to take it for the rest of her life.) But she doesn’t feel “different” —except toward Greg. “Greg and I were always close. But the transplant made us even closer. He’s the most special of my brothers now,” Celeste said warmly.

Special? Greg likes to think that he’s the lucky one. “I was glad to be given an opportunity to do this,” Greg explained. “After all, not many people have the chance to show their love for someone the way I did.”

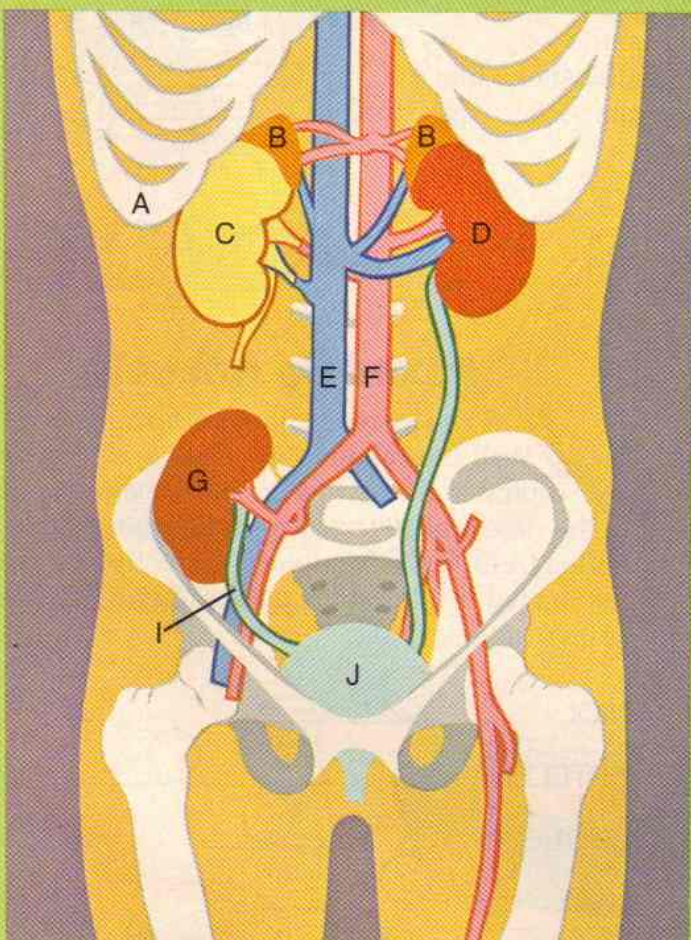


ILLUSTRATION © JO LYNN GRASS

Just below your ribs (letter A) are your kidneys (C and D). But if one kidney isn't working correctly, a transplant can take place. Doctors put the new kidney (G) in a different place—the hipbone. Bodily wastes flow out of the kidneys through a tube called the ureter (I)—and collect in the bladder (J). The adrenal glands (B) give off a chemical which helps your body respond to emergencies. Letters E and F are the vein and artery which keep the blood flowing to and from your kidneys.

Artificial Parts

Transplants of real human organs don't always turn out as well as Celeste's operation did. So artificial organs may be what doctors turn to in the future if a person's heart or liver needs to be replaced. Medical researchers are already working on many kinds of artificial organs.

Scientists have now developed an artificial heart made of plastic and metals. It works like a simple pump. A power pack that operates on batteries keeps it running. The power pack started out the size of a shopping cart. But now doctors are testing a 'mini' that can be worn around the neck with shoulder straps. This will make it easier for people with heart transplants to move around.

One of the newest human-made organs is skin. Artificial skin grown in test tubes is already helping burn victims. Scientists start out with a sample of skin the size of a postage stamp. Chemicals in the test tube make the skin cells reproduce.

Artificial kidneys and livers are in the works, too. But they are a long way off. Compared to the heart, the kidneys and liver are very complicated organs. Each has many jobs to perform in the body. So far, there's nothing like the real things to take over!

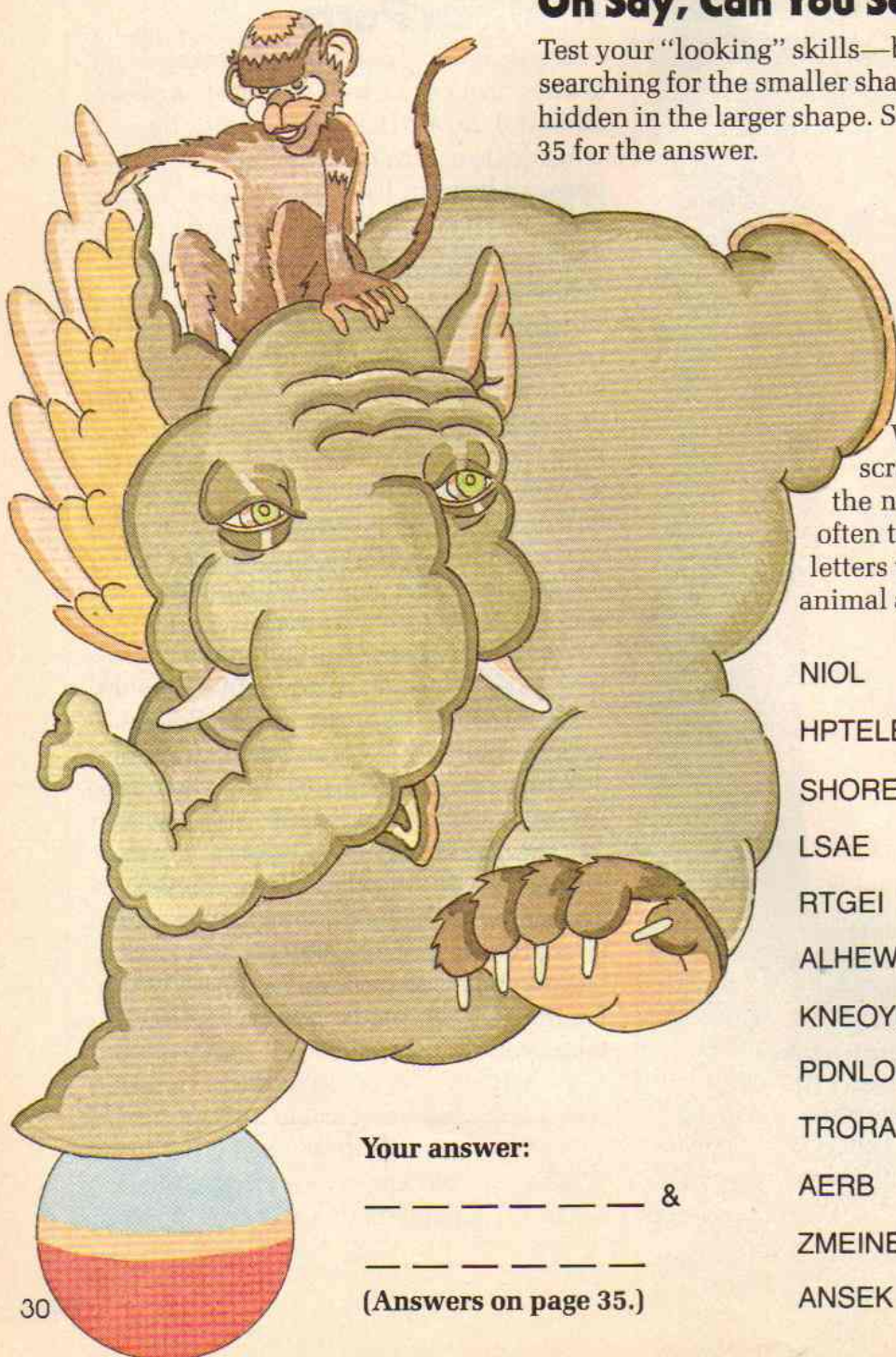
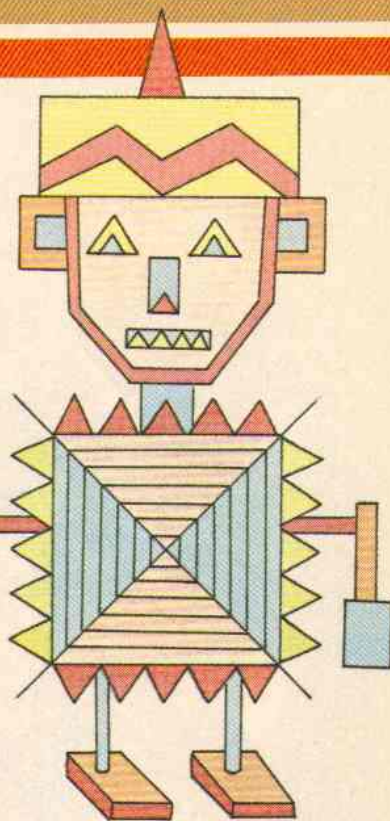
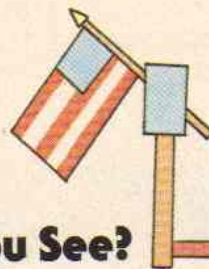
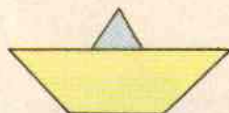
Extra!

by Ellen R. Mednick

Hold on to your magazine—and get ready for some Extra! fun, games, and contests to keep you busy during the windy month of March.

Oh Say, Can You See?

Test your “looking” skills—by searching for the smaller shape that’s hidden in the larger shape. See page 35 for the answer.



Mixed Up Animals

You’ve read about performing pets. Well how about dancing letters? Just unscramble the mixed-up letters below to find the names of 10 terrific animals that people often train. If you’ve done it correctly, the circled letters will spell out the names of two famous animal actors.

NIOL

HPTELENA

SHORE

LSAE

RTGEI

ALHEW

KNEOYM

PDNLOHI

TRORAP

AERB

ZMEINEPHAC

ANSEK

Your answer:

 &

(Answers on page 35.)

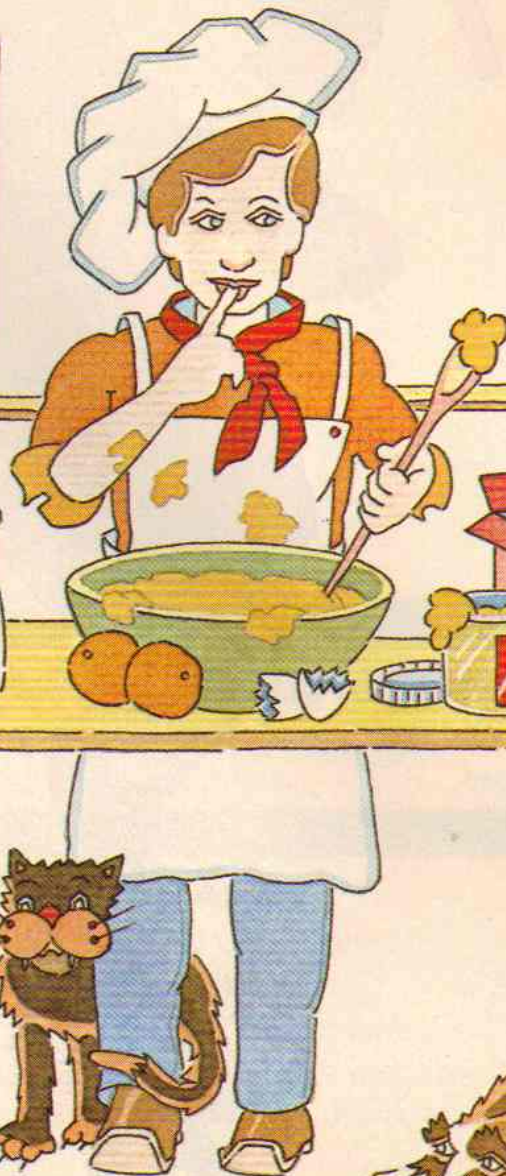
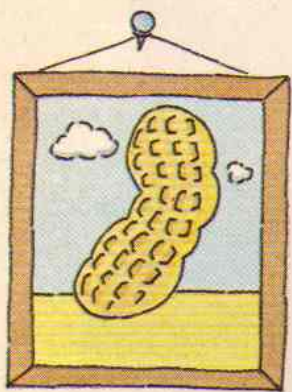
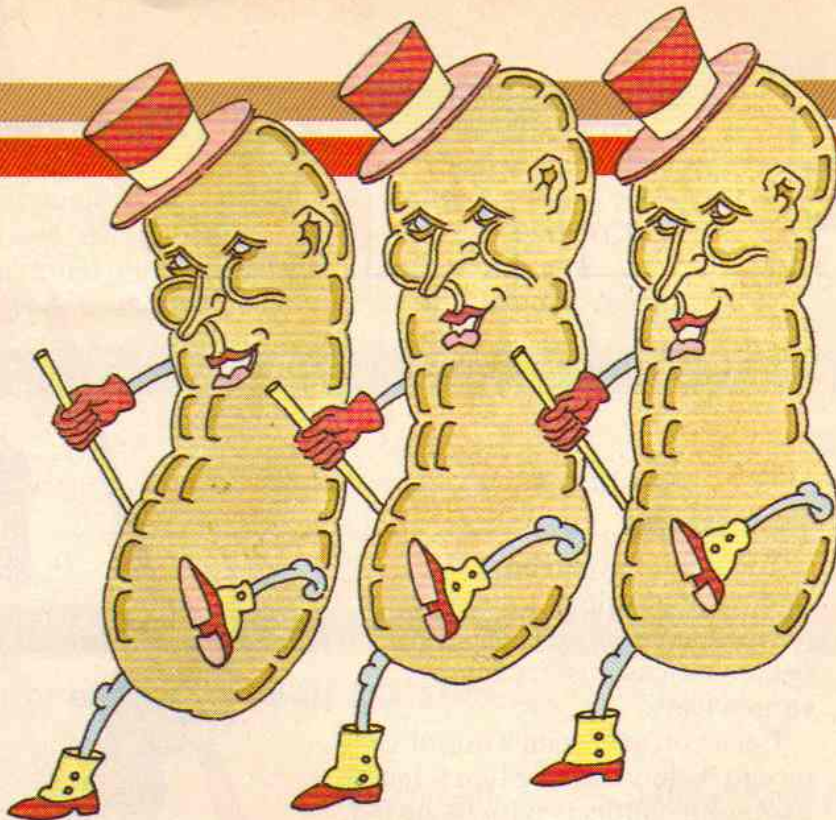
Peanut Power

March is National Peanut Month. So for some fun news about peanuts—and free recipes—just write:

The Georgia Peanut Commission
P.O. Box 967
Tifton, GA 31794

P.S. Two of the dancing peanuts are exactly alike. One is slightly different. Can you spot the odd peanut?

Answer on page 35.



Peanut Surprise Contest

Can you imagine life without peanut butter? Since each American snarfs down about 9.5 pounds of peanuts a year, life without peanut butter would be a pretty sticky situation.

How about coming up with your own peanut butter recipe? Make it as original, weird, yummy, scrumptious, or silly as you like. But be sure and try it. Then write down your recipe and send it to:

3-2-1 Contest:
Peanut Surprise
P.O. Box 599
Ridgefield, NJ 07657

ILLUSTRATIONS © MICHAEL DONATO



Extra!

Pet Tricks

You don't have to be a professional animal trainer like the ones on page 18 to teach your pet new tricks. Just try these simple feats:

Have you ever seen a dog or cat race to its food bowl when it heard a sound it connects with being fed, like the noise of a can opener? If you're patient, you can train your pet to associate a new sound with feeding time. Try ringing a bell or blowing a whistle just before you feed your pet. Don't make that sound at any other time. After a week or so, make the noise and see what happens. Your pet will probably know it's feeding time.

Teaching your pet a trickier trick will take longer. Dogs are fairly easy to train because either food or praise can be used as rewards.

Suppose you want to teach your dog to shake hands with his right paw. First, give a signal. Put out your right hand and say, "Shake!" Then pick up his right paw and praise him. Repeat this many times. But stop when your pet acts bored.

Give your dog a short training session twice a day for a week or two. Soon, your pet should offer his paw when you give the signal. Don't reward him for left-handed shakes.

Did your pet learn the new tricks easily? Maybe you and he have a future in show business!



ILLUSTRATION © MICHAEL DONATO

Contact Us!

Win a T-shirt! We want to know what you think of CONTACT. Fill out this form and send it to us. We'll put all of them in a box. Then we'll pick 10 without looking. Each winner will get a CONTACT T-shirt. Mail your form to:

Reader Poll
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

1. First, tell us about yourself.

Name _____ Age _____ Grade _____ T-shirt size _____
 Address _____
 City _____ State _____ Zip Code _____

2. Now tell us what you thought of this issue of CONTACT.

Here is a list of stories. Mark each with an X for us.

Title		I Liked It!	I Didn't Like It!	I Didn't Read It!
Spring Cleaning Puzzle	(p.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coming Attractions	(p.4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado!	(p.6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Bloodhound Gang	(p.11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Factoids	(p.14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any Questions?	(p.16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How's Tricks?	(p.18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List of the Month	(p.22)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experiment: Wind Wheel	(p.24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It's All in the Family	(p.26)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra!	(p.30)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pet Tricks	(p.32)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact Lens	(p.36)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. We want to know about your favorite things. What's your favorite...

movie _____ TV show _____
 game _____ book _____

4. Hang On! You're almost done.

Does your family own a computer? ☐ yes ☐ no

If yes, what kind of computer? ☐ Adam ☐ Apple ☐ Atari ☐ IBM

☐ Commodore 64 ☐ VIC-20 ☐ Timex/Sinclair ☐ T.I. 99/4A ☐ Other _____

What do you do with a computer? (You can check more than one box.)

☐ Play Games ☐ Homework ☐ Word Processing ☐ Create Graphics

☐ Write My Own Programs ☐ Other (please explain) _____

Does your family own a video game system? ☐ yes ☐ no If yes, which kind _____

ENTER ORDER FORM

- ☐ Yes! Please send 1 year (10 issues) of Enter for only \$14.95

CHILD'S NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ PAYMENT ENCLOSED ☐ BILL ME LATER

MAIL TO: Enter Magazine
One Disk Drive, P.O. Box 2685, Boulder, CO 80322

Subscriptions to Canada and other countries, add \$8.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8H286

INFORM WITH ENTER

NEW—ENTER Magazine. The fun way for your child to learn computer skills, understand computer technology and even become a video game champ. Ten issues bring programs, quizzes, puzzles and features that involve 10-16 year olds and encourage them to become competent computerites. And you don't need a computer in your home to make it work!



SESAME STREET ORDER FORM

- ☐ Yes! Please send 1 year (10 issues) of Sesame Street for only \$9.95.
☐ I prefer 2 years (20 issues) for only \$18.95.

CHILD'S NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

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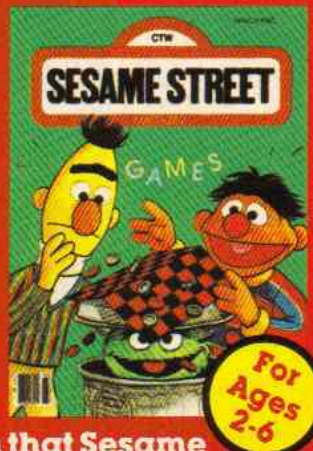
☐ PAYMENT ENCLOSED ☐ BILL ME LATER

MAIL TO: Sesame Street Magazine
P.O. Box 2894, Boulder, CO 80322

Subscriptions to Canada and other countries, add \$6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8H294

ENJOY WITH SESAME STREET

Sesame Street Magazine—Big Bird and his delightful friends will bring dozens of playful surprises, ten terrific times a year. (It's the entertaining education that Sesame Street does best!) Puzzles, cut-outs, games, A-B-C's, 1-2-3's...there's all the magic of the TV super-series in every colorful issue.



THE ELECTRIC COMPANY ORDER FORM

- ☐ Yes! Please send 1 year (10 issues) of Electric Company for only \$9.95.
☐ I prefer 2 years (20 issues) for only \$18.95.

CHILD'S NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ PAYMENT ENCLOSED ☐ BILL ME LATER

MAIL TO: The Electric Company Magazine
200 Watt Street, P.O. Box 2922, Boulder, CO 80322

Subscriptions to Canada and other countries, add \$6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8H3A0

ENTERTAIN WITH ELECTRIC COMPANY

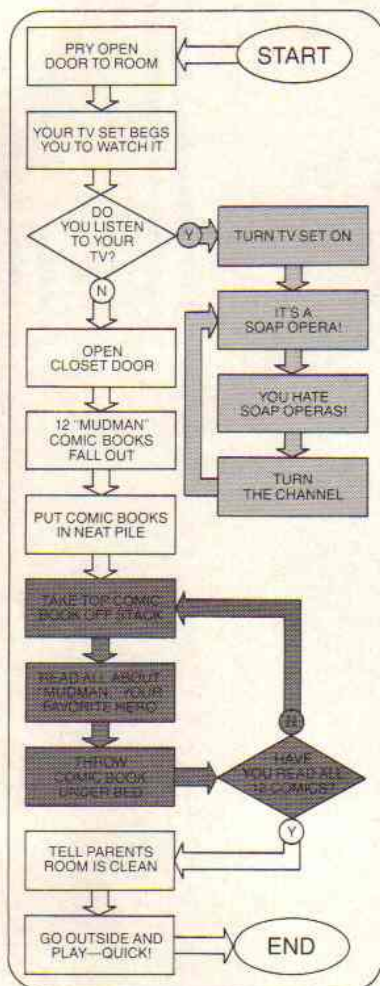
The Electric Company Magazine—as creatively entertaining as the T.V. show kids love. It's amusing, playful, absorbing and educational for beginning and young readers. Enjoy ten colorful issues filled with puzzles, posters, cut-outs, stories, jokes...and sunny smiles.



How to Spring Clean (page 2)

This flowchart has two loops. You enter Loop 1 by answering "yes" to the first question. But once you're in, you keep going around and around.

Loop 2 works in a different way. If you answer "no" to the second question, that puts you in the loop. If you keep answering "no," you stay there. But there is a way out. Answer "yes" to the question and you can finish the rest of the program.



LOOP 1

LOOP 2

Thank You! Thanks to our student intern, Ilisa Sohmer, for her help with this issue.

Mixed Up Animals (Page 30)

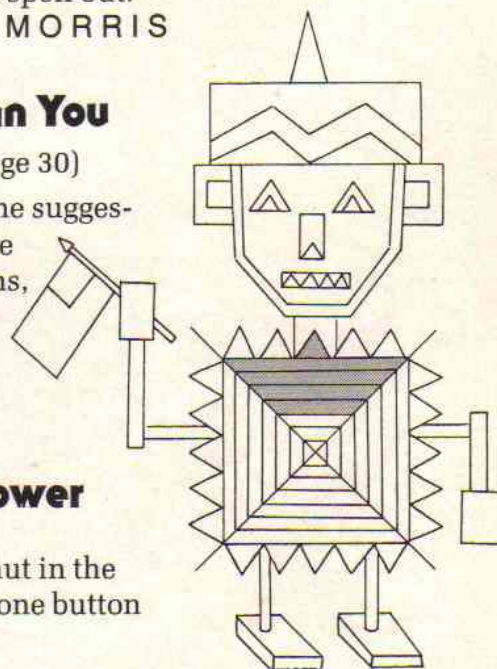
LION
 ELEPHANT
 HORSE
 SEAL
 TIGER
 WHALE

MONKEY
 DOLPHIN
 PARROT
 BEAR
 CHIMPANZEE
 SNAKE

Circled letters spell out:
LASSIE & MORRIS

Oh Say Can You See... (page 30)

Here's just one suggestion. There are other solutions, too. Why not try and find them?



Peanut Power (page 31)

The first peanut in the row has only one button on one shoe.

Next Month!

Here's a sample of what you'll find in the next issue of 3-2-1 CONTACT.

Who Searches for Nessie?

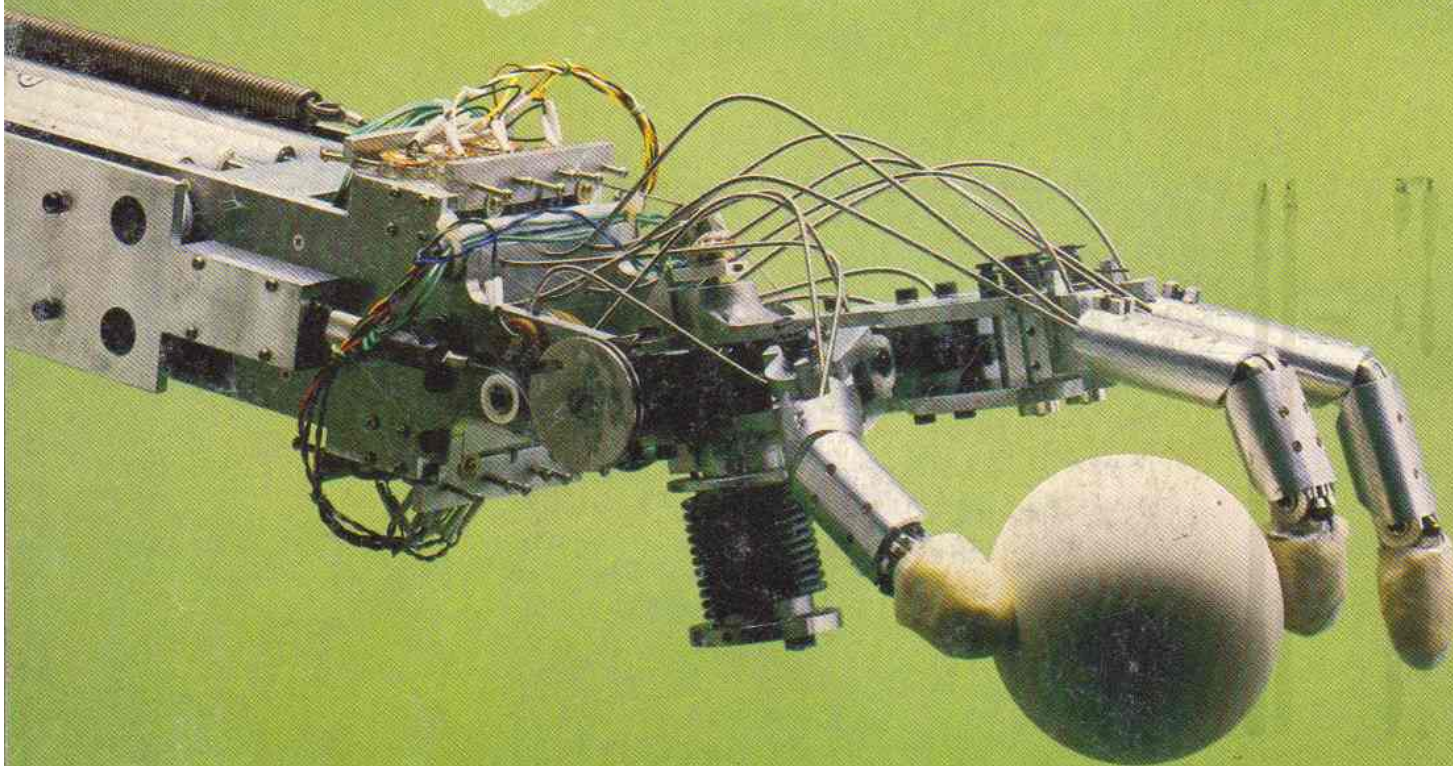
Meet some of the people who search for the Loch Ness Monster.

Two by Two

Find out what scientists are learning about twins.

Plus Factoids, Letters, Puzzles and More!

Contact Lens



Lend a Hand

Some people may think this is a modern version of Captain Hook. But it's really an experimental robot hand. The amazing hand can work with objects as easily as a human hand can.

The robot has a wrist and three fingers which stand for the index finger, middle finger, and thumb. Each finger has four joints so the hand can easily hold on to objects. The wrist can move the hand up and down and back and forth.

Scientists say that this new robot hand will have many uses. It can do the delicate work of putting tiny parts together on an assembly line in a factory. The robot hand may also perform sensitive jobs in nuclear power plants.

3-2-1 CONTACT
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